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CONTENTS Page 1. INDEX TO ADVERTISEMENTS Page 2.

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Remarks on Emergency Amputations in Military Surgery.

I. A SIMPLE MODIFICATION OF THE GUILLOTINE OR FLAPLESS METHOD OF AMPUTATION.

II. THE FORCEPS TOURNIQUET.

BY

LIEUT.-COLONEL J. LYNN THOMAS, C.B., F.R.C.S.,
CONSULTING SURGEON TO THE WESTERN COMMAND.

I.—*The Modified Circular Amputation with Lateral Incisions.*

I HAVE had the great privilege of studying carefully the methods introduced by Colonel H. M. W. Gray, C.B., in dealing with septic wounds of the extremities and of other regions. I have also had the advantage of putting them into practice, and am convinced that if they were applied in the first dressings to all cases calling for amputation, whether at the front, at the field ambulances, at the casualty clearing stations or at the base hospitals, the so-called "guillotine" or flapless method of amputation would soon cease to be practised.

It is to be borne in mind in the first place that the term "guillotine" or flapless amputation is not applicable to cases in which there is not sufficient skin to cover the raw surfaces when circumstances demand the removal of an entire limb from the trunk, whether this necessity be due to the severity of the mechanical destruction of the tissues or to the extent of infection. In this condition the surgeon must perform an operation of expediency; he must cut his coat according to his cloth.

It is to be remembered that the apparatus devised, or said to have been devised, by Dr. Joseph Ignace Guillotin (it certainly bears his name) for cutting through all the tissues of the neck at the same level, had the merciful quality of performing its work in one second, or an even shorter time.

The term "guillotine" is most improperly applied to the flapless operation with regard to the aspect of speed of execution; it has no vestige of a claim to be held on this account to be superior to the circular amputation of Celsus, which has enjoyed, or rather has survived, a reputation of some twenty centuries. Both—the guillotine and the Celsus amputations—take a varying number of minutes, the exact duration depending upon the skill, experience, and dexterity of the operator.

The "new" guillotine and the "old" circular amputations have two fundamental points in common: the first is that each takes about the same length of time to perform, and the second is that in both all the tissues are divided at the same level. Therefore there is no good reason for introducing a new nomenclature.

The Celsus circular amputation was modified a long while ago with the definite objective of minimizing the recurring physical pains, which caused the patient to dread the dressing of the stump; the modification also had the further important advantage that it saved the patient the trying ordeal of reamputation.

I feel convinced that one or more of the well-known modifications of the old circular amputation could safely replace the guillotine operation, and the one which appeals to me is that which consists in making two lateral incisions through the apparently healthy soft tissues right down to the bone.

The upper or proximal extensions of the lateral incisions are determined by the point at which sufficient soft tissues can be obtained to give ample covering for the bone. The main indications are speed and simplicity. The above modification of the old circular amputation renders it easy to adopt Colonel Gray's method of packing the wound, as shown in Fig. 4. It is also easier of performance than the "cuff" modification of Celsus operation when the surgeon is single-handed or inexperienced in the art of amputation. Further, the lateral incisions allow of better drainage than the cuff circular incision.

The following are the essential points in carrying out the circular amputation with lateral incisions:

1. The level at which the section of the bone is to be made must first be determined.

2. The proximal ends of the lateral incisions begin at this determined point, and are carried down to the bone and continued towards, or into, the damaged tissues, as shown in Fig. 1.

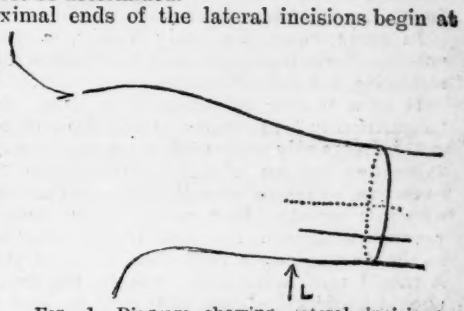

FIG. 1.—Diagram showing lateral incisions starting from the level (L) determined on for the section of the bone and continued towards or into the damaged tissues, and showing also the line of the circular incision.

3. A clean knife must be used for each lateral incision if available; if not, the knife should be thoroughly wiped and sterilized by flame.

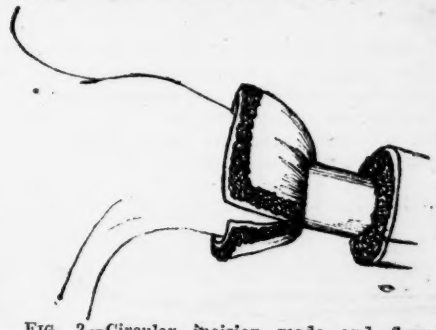

FIG. 2.—Circular incision made and flaps retracted to the determined point.

4. The soft tissues are then divided by one clean sweep down to the bone after the manner of the old circular method.

5. The two flaps thus produced by the combination of the circular and the lateral incisions are retracted (Fig. 2) and the bone is sawn through at the level previously determined.

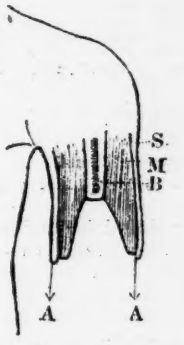

FIG. 3.—A A, Skin pulled in direction of arrows and forming funnel-shaped cavity; B, bone; M, muscle; S, skin.

FIG. 4.—Flap brought over cavity (G) packed with gauze.

6. The vessels are ligatured with silkworm-gut or catgut, not thread or silk, for fear of sepsis in the wound.

7. The flaps are then forcibly pulled down, forming a funnel-shaped cavity (Fig. 3) in which the muscles are not in apposition, as shown in longitudinal section in Fig. 4.

8. This cavity is firmly packed with sufficient gauze wrung out of Wright's hypertonic salt solution or Dakin's fluid so as just to allow the flaps to meet firmly over the packing (Fig. 4). The flaps are secured in position by three strips of self-adhesive strapping and the ends of the gauze are allowed to project at each corner through

FIG. 5.—End of stump ready for application of gauze dressing. S, Strapping; G, gauze.

the lateral incisions, in the manner shown in Fig. 5, so as to ensure drainage. The stump is then covered with a dressing of sterile gauze and a bandage.

The ordinary rubber drainage tubes, whether large or small, must not be used.

In some cases, but only rarely, a few interrupted sutures of silkworm-gut may be inserted to reinforce the strapping, but they should be quite slack.

It is a matter of observation that the dirty grey "diphtheritic" infections of the flaps of stumps, which not infrequently supervene upon the insertion of rubber tubes and the use of tight stitches, are usually rapidly overcome by laying open the flaps and packing with gauze and salt tablets. How much easier, then, would be the prevention of such infections if the surgeon would boldly in the first instance pack the whole of the raw surface. A tube, 5 mm. in diameter, may be put into the gauze; it should project on each side and be tied at its centre; holes should be made in it on each side of the point at which it is tied, so that Dakin's fluid, if that preparation be preferred, may be injected from each side into the pack. Personally I consider Gray's salt pack more suitable for the military emergencies existing between the front and the base.

II.—*The Forceps Tourniquet in Military Surgery.*

During the last eighteen years I have not used the rubber or any other tourniquet for any amputations of the thigh, nor for aneurysms in that situation.

Many of those who have seen the forceps tourniquet in use have adopted it, but as practical knowledge has the peculiarity of slow diffusion, I venture at this moment to draw attention to it again, as the field for its employment in war is very great. Binnie, Jacobson, Kocher, Charles Mayo, and Tuffier have all spoken with enthusiasm of its usefulness.

FIG. 6.—Diagram of forceps tourniquet modified for use in military surgery. It shows the probe-pointed blade. The ring at the point of the other blade is shown half scale at the side. The ratchet is of the Girard pattern, self-releasing. The instrument was originally introduced for controlling the femoral vessels (*Lancet*, 1898, vol. i, p. 1112). Later on, in the Boer war, it was used for this purpose, and for controlling other vessels (BRITISH MEDICAL JOURNAL, 1904, vol. ii, p. 835; also *Transactions* of the International Surgical Congress, Brussels, 1905). It is made by Messrs. Weiss and Son, London.

One blade is smooth and probe-pointed for underrunning the blood vessels to be controlled, the other is roughened and has an expanded ring-shaped end to prevent its slipping over the skin. A stab puncture of the skin is made at a point suitably placed in relation to the vessels to be controlled, and through it the probe-pointed blade is driven forcibly behind the large blood vessels (femoral artery and vein). When the forceps is closed the other blade firmly grasps the skin, and, owing to its roughened edge and the expanded ring end, does not slip. The forceps is securely closed by means of the ratchet on the handles. The time occupied in applying the forceps is not more than a second; the arteries and veins are simultaneously controlled, no assistant is required, and the instrument is always reliable; it is sterilized with the other instruments. The stab puncture in the skin is dressed with iodine and a pad of sterilized gauze, ¼ in. in diameter, fixed on with strapping. In military surgery the nature and situation of the wound will often render it unnecessary to make a stab puncture for the probe-pointed blade; I have found, when recently using the instrument in France, that it is necessary, on account of the muscle destruction, to modify the forceps so as to bring the blades closer together. The parts to be compressed are in these conditions considerably thinned. The application of the forceps tourniquet to the thigh has been described, but it will be seen that it can be used also in amputations of the arm or at the shoulder. It has, in fact, been used with success in these situations.

THE INTRASPINAL TREATMENT OF SYPHILIS OF THE CENTRAL NERVOUS SYSTEM;

WITH THE REPORT OF CASES.

BY

A. ROCKE ROBERTSON, CAPTAIN C.A.M.C.,

IN CHARGE OF LABORATORIES AND WARD FOR TERTIARY SYPHILIS, THE GRANVILLE CANADIAN SPECIAL HOSPITAL, RAMSGATE.

IT is only within the last few years that a vigorous attempt has been made to treat this disease by the introduction of a powerful antisyphilitic remedy into the spinal canal.

After a brief localization within the primary sore, the *Spirochaeta pallida* very rapidly reaches the systemic circulation—probably within a few days after, or, some hold, even before the first appearance of the chancre. At this stage the spirochaete has been successfully isolated and cultivated from lesions and the blood in the human being, and in experimentally induced syphilis in rabbits and monkeys. The exceedingly fine, spiral, thread-like character and motility of the organism, together with its apparent preference for connective tissue and lymph spaces, cause it early to migrate into the vessel walls, or to pass through the latter into the surrounding connective tissue.

In infants dead of congenital syphilis the organisms are commonly found in vast numbers in the walls of the sinusoids of the liver and spleen, and also within the intermuscular lymph spaces in the wall of the heart. The toxin produced is apparently mild, and the tissues which chiefly respond to this irritation are connective tissue and endothelial cells. When the organism is present in great numbers within the circulating blood and in the connective tissue of the intima—that is, in the secondary stage—the consequent toxaemia is marked by the presence of fever, malaise, anaemia, vague nervous disturbances, general glandular enlargement, etc. Somewhat later the organisms have practically disappeared from the blood, many having perished, while others have penetrated deeply within, or passed beyond the vessel walls in certain localities, where they eventually give rise in the main to the formation of connective tissue lesions. Such lesions are found chiefly in the intima and adventitia of small vessels where the connective tissue, in particular, proliferates enormously. The intima may become so thickened that the lumen of the vessel is partly or totally occluded, and it is owing to this fact that tissues supplied by such vessels are rendered anaemic and in consequence eventually perish, only to be replaced by scar tissue. The organisms lie within or between connective tissue or endothelial cells, and thrive in these granulomata, which, being relatively avascular, are therefore anaemic. Thus, it can readily be seen that in the late secondary or tertiary stages of syphilis the organisms are located deep within these anaemic tissues, are relatively shut off from the blood and lymph stream, and also from antagonistic agents which the blood may contain. It is apparently owing to these facts that the tertiary manifestations of syphilis are often so resistant to treatment.

There are no accurate data to show what percentage of syphilitics in the secondary stage have actual involvement of the central nervous system, but, since the cerebro-spinal fluid has often been found to show changes, it is reasonable to suppose that many of the nervous manifestations of this stage are directly due to the action of the spirochaete upon the meninges, probably of the nature of a miliary syphilitic meningitis. In 1903 Ravaut, examining spinal fluid in secondary syphilis, found abnormal changes in 70 per cent. of all cases. Plant found changes in 66 per cent. Nonne and Montoux, as a result of their own investigations of spinal fluid, found that 40 per cent. of all cases of syphilis eventually exhibit some evidence of involvement of the nervous system. Gennerich thinks that all early constitutional cases (Wassermann positive) will, after salvarsan or mercury, develop an increase of lymphocytes and globulin — that is, a provocative reaction will be obtained in the spinal fluid. It seems, therefore, that nervous tissues and the membranes covering them are particularly susceptible to invasion

by the spirochaete, and, once this has occurred, the infection is likely to persist, for two reasons: (1) The arteries supplying nervous tissues are for the most part "end arteries," which, if they become occluded by syphilitic endarteritis, leave the tissue they supply in a relative state of anaemia—a condition which favours the protection and development of the spirochaete. (2) Any remedial agents introduced by the blood stream do not readily reach the cerebro-spinal fluid which bathes the infected meninges, because this fluid is not a transudate from either the lymph or blood stream, but is a true secretion of the ependymal cells of the choroid plexus. Thus, it can readily be seen how important it is to introduce some powerful remedial agent actually into the cerebro-spinal fluid, if one hopes for any marked effect upon the spirochaete localized in the meninges or the underlying nervous tissues. Especially is this desirable in the early stages of infection of the central nervous system, since, in the majority of cases, the lesions then are chiefly, if not entirely, vascular or meningeal. Later on, should the infection not cease spontaneously or under treatment, the underlying nerve tissue becomes involved in a definite manner. The spirochaetes invade the adjacent nerve tissue, causing marked proliferation of neuroglia and consequent degeneration of nerve cells. The clinical symptoms resulting therefrom will depend upon the locality of the infection. The basal meninges are most frequently involved, and the connective tissue overgrowth in this situation commonly causes headache and often injury to one or more of the cranial nerves which pass through. When the meninges covering the posterior roots and ganglia are involved the symptoms will ultimately be those of tabes dorsalis. Infection of the cerebral meninges and cortex, in a precisely similar manner, means paresis. Clinically, we often see the infection manifest itself as tabes, with later paretic manifestations, and vice versa—the condition being familiarly known as tabo-paresis. Less frequently gummata of the dura or pia-arachnoidal tissues occur. The underlying pathological process, both ætiologically and histologically, is the same for all, since, by means of Levaditi's silver impregnation method, Noguchi and others have demonstrated the spirochaete actually within these lesions.

The problem, then, is to detect syphilis of the central nervous system at the earliest possible stage, and then endeavour to arrest the process or destroy the spirochaete *in situ*. Since the introduction of salvarsan and neo-salvarsan great expectations have been aroused in this direction, especially since it is now possible to introduce these agents directly or indirectly into the cerebro-spinal fluid.

It was first attempted to introduce salvarsan directly into the subarachnoidal space. Wechselman in 1912, Marinesco in 1913, and also Levaditi and Marie failed to do this successfully on account of the strong toxic action of salvarsan. But Ravaut was successful in injections of neo-salvarsan without apparently producing any serious results. Wile followed Ravaut's technique in 15 cases—7 tabetics, 5 paretics, and 3 cases of cerebro-spinal syphilis; of these 7 showed marked improvement. He advised the use of only very small doses of the drug. This method is the direct introduction of neo-salvarsan. Other observers, however, who ventured this treatment reported untoward symptoms, and Alfred Gordon of Philadelphia had a most distressing result in which extensive gangrene and paralysis of the lower extremities resulted, eventually leading to death.

Swift and Ellis were the first to employ what is now regarded as the safest method—that is, first to give an intravenous injection of neo-salvarsan, and one hour later to withdraw about 50 c.cm. of blood, which is allowed to clot over a period of twenty-four hours. The resulting auto-salvarsanized serum is now pipetted off, heated to 56° C. for half an hour, diluted in 0.6 per cent. salt solution to a 40 per cent. strength, and about 30 c.cm. of this is injected into the spinal canal after an equal quantity of spinal fluid has been withdrawn.

Osborne has modified this method by adding a definite measured amount of neo-salvarsan directly to the patient's blood serum, and then injecting this into the spinal canal. Its advantage lies in the fact that a definite measured amount of the drug itself is introduced into the spinal fluid, whereas by Swift and Ellis's method the auto-salvarsanized serum undoubtedly contains an amount of the drug which will vary in each case. In fact, such an infinitesimally small amount of the drug is introduced by the Swift and Ellis method that it is difficult to understand how the drug in itself is the actual beneficent agent. Some observers believe that the drug acts by calling forth a larger production of syphilitic antibody, and that the activity of auto-salvarsanized serum depends upon its relatively larger content of syphilitic antibody than that of normal serum. However this may be, the fact remains that a large percentage of cases of central nervous system syphilis have shown marked improvement or have been completely cleared up—depending, of course, upon the degree of involvement. The present belief is, that in general paresis, and advanced tabes dorsalis, only partial improvement can be effected, but that in early tabes, and syphilitic meningitis the chances of a cure both from a clinical and laboratory standpoint are excellent.

The following cases embrace both slight and advanced involvement of the central nervous system. The laboratory examinations were made chiefly for determining the relative decrease in the strength of the complement-fixation reaction, and of the globulin content as a result of each intraspinal treatment, and to see how these compared with the changing clinical condition.

CASE I.

A. F. M., aged 36; May 28th, 1914. No admission of syphilis. Five weeks ago while reading in bed the vision of the left eye suddenly became blurred. The following morning this eye was painful, and he noticed then for the first time that the left pupil was much larger than the right. It remained dilated, and ten days later a Wassermann test of his blood serum proved strongly positive. During the last year he had had shooting pains in the legs which were worse at night and often awakened him.

August 8th, 1914. Pupils react well to accommodation but sluggishly to light, the left remaining much larger than the right. Optic discs normal. Knee-jerks absent. Slight anaesthesia of soles of feet. No definite Rombergism or ataxia. Diagnosis: Tabes dorsalis (pre-ataxic stage). Gave salvarsan 0.6 gram.

August 22nd, 1914. No change clinically; lightning pains severe. Wassermann reaction positive, but weaker than on August 8th, 1914. Gave 0.9 gram neo-salvarsan intravenously.

October 6th, 1914. Wassermann reaction of blood serum faintly positive.

October 9th, 1914. Feeling better; pains less severe and less frequent. Gave 0.9 gram neo-salvarsan intravenously.

October 10th, 1914. Lumbar puncture. Spinal fluid limpid and clear. It shows marked increase of globulin by Noguchi's butyric acid test. Improvement of symptoms.

October 24th, 1914. Wassermann test of blood serum negative. Gave 0.6 gram salvarsan intravenously. Twenty minutes later withdrew 50 c.cm. of blood.

October 25th, 1914. Diluted 12 c.cm. of the auto-salvarsanized serum with 18 c.cm. of 0.6 per cent. saline, and gave intraspinally, first having withdrawn an equivalent amount of spinal fluid. Raised foot of bed six inches for four hours. Pain in legs somewhat severe four hours later, but soon subsided. Otherwise no other symptoms. Noguchi test gives weaker globulin reaction than on October 10th, 1914.

October 28th, 1914. Intravenous salvarsan 0.6 gram, and withdrew blood as before.

October 29th, 1914. Gave auto-salvarsanized serum intraspinally as before. Noguchi globulin test of spinal fluid faintly positive. General health of patient is markedly improved. The dilated left pupil is perceptibly smaller. The lightning pains are much less frequent and less severe.

January 14th, 1915. Intravenous neo-salvarsan 0.9 gram.

January 15th, 1915. Intraspinal serum as before. Spinal fluid gives positive Wassermann reaction with a minimum of 0.4 c.cm. Noguchi test faintly positive.

April 28th, 1915. No lightning pains since the last injection. Health excellent. Knee-jerks absent. Pupils still unequal, but the left is slightly less dilated than when last seen. Both also react to light more vigorously than on October 29th, 1914. Gave intravenous salvarsan, 0.6 gram.

April 29th, 1915. Gave intraspinal serum as before with no uncomfortable symptoms following. The spinal fluid gives a negative Wassermann reaction with 1.0 c.cm. The Noguchi test still shows a slight increase of globulin. The general health of the patient is very markedly improved; the left pupil is much smaller, though still larger than the right.

In this case the general health of the patient has undergone marked improvement. The dilated left pupil has diminished in size, and both have become more active to light. The lightning pains have been completely abolished up to the last date of treatment. A positive Wassermann reaction of blood and spinal fluid has become negative.

CASE II.

W. A. M., aged 51; January 1st, 1915. Fairly clear history of syphilis about eighteen years ago. Has always led a laborious

outdoor life until three years ago. Two years ago shooting pains in the legs began to trouble him, and during the last year the gait has been a little unsteady. There has been a numbness in the feet, as if walking on velvet. Has had cystitis for several months, with marked atonicity of the bladder. On examination: Pupils very small, inactive to light; fundi normal. Anaesthesia of palms of hands and soles of feet. Gait very slightly ataxic in daytime, but more markedly at night. Slight Rombergism; some muscular hypotonicity. Blood gives leucocytosis of 10,000, and strong positive Wassermann reaction with 0.1 c.cm. inactivated serum.

January 13th, 1915. Neo-salvarsan 0.9 gram intravenously; withdrew blood half-hour later. On following day gave intraspinous serum as detailed above. Spinal fluid is under pressure; is clear, shows marked globulin increase (Noguchi), and positive Wassermann reaction with a minimum of 0.4 c.cm.

February 1st, 1915. General health much improved; putting on weight. No lightning pains, and much less anaesthesia of feet. Has much better control of urine, and voids voluntarily. Gave intravenous salvarsan 0.6 gram.

February 2nd, 1915. Gave intraspinal serum. Spinal fluid gives increased globulin (Noguchi), and positive Wassermann reaction with a minimum of 1.0 c.cm.

February 20th, 1915. Intravenous salvarsan, followed by intraspinal serum as before. Spinal fluid globulin test (Noguchi) weaker than on February 2nd, 1915. Wassermann reaction positive with minimum of 1.0 c.cm.

April 14th, 1915. Intravenous salvarsan 0.6 gram. Intraspinal serum given eight hours later. Spinal fluid shows still an increase of globulin, but less than before. Wassermann reaction still positive with 1.0 c.cm.

May 10th, 1915. Intravenous and intraspinal treatment as above. Spinal fluid shows faint increase of globulin, and Wassermann reaction still present with 1.0 c.cm. The general health has steadily improved; he feels much less anaesthetic in the feet, and his hands are now normally sensitive. He has perfect control of the bladder.

June 14th, 1915. Combined treatment as given above; the spinal fluid shows no change.

September 3rd, 1915. Combined treatment as given above, using diarsenol for the first time. Spinal fluid shows very weak globulin reaction. Wassermann reaction negative now with 1.0 c cm., but positive with 1.5 c.cm.

October 20th, 1915. Combined treatment, using diarsenol. Spinal fluid shows very faint globulin reaction, and a negative Wassermann with a maximum of 1.5 c.cm. The patient's health is still improving, and he states that he is now in better health than he has been for several years. He is now able to carry on with his work as usual.

In this case of well-marked tabes dorsalis in the early ataxic stage, where both blood and spinal fluid gave a strong positive Wassermann reaction, and the spinal fluid showed marked increase of globulin, the Wassermann reaction has become negative, and the amount of globulin reduced to a trace. Clinically there has been complete alleviation of his distressing symptoms, particularly the atonicity of the bladder, so that he again has perfect control. The lightning pains have ceased; the anaesthesia has disappeared in the hands, and has markedly improved in the feet. He has gained in weight, and feels in excellent health.

CASE III.

D. S., aged 31. Primary sore in April, 1914. In August he had an ulcerated throat, and was treated with mercurial inunctions. In October he noticed that he was becoming deaf, and received an intramuscular injection of salvarsan. On November 23rd, 1914, Wassermann reaction of blood negative.

He was seen on March 7th, 1915, for the first time. Feels nervous; has headaches often; believes that he is becoming progressively deaf, for which he has lately been treated for Eustachian tube trouble without improvement. On examination, the pupils are unequal, the left is slightly larger. Both react to light and accommodation. All reflexes are normal. A diagnosis of central nervous system involvement was made on the strength of progressive deafness, inequality of pupils, headache, and nervousness. The spinal fluid is clear, and slightly under increased pressure; its Wassermann reaction strongly positive with 0.5 c.cm. Marked increase of globulin (Noguchi). Has been taking maximal doses of mercury by mouth. Wassermann test of blood strongly positive.

May 22nd, 1915. Gave intravenous salvarsan 0.6 gram, followed by intraspinous serum. Spinal fluid shows positive Wassermann reaction.

July 9th, 1915. Combined treatment as above. Spinal fluid: Positive Wassermann reaction with minimum of 0.5 c.cm. Globulin test strongly positive.

September 4th, 1915. Combined treatment as above, using diarsenol. Spinal fluid: Wassermann reaction negative with a maximum of 1.5 c.cm. Noguchi globulin test faintly positive. This is a very marked improvement since the last treatment two months ago. The patient's hearing is progressively improving, and the inequality of the pupils is very much less.

October 9th, 1915. Combined treatment as before. Spinal fluid: Wassermann reaction negative with maximum of 1.5 c.cm. Globulin test (Noguchi) very weakly positive. His hearing now is practically normal, but there still remains very slight inequality of the pupils. He has no headaches, is not nervous, and feels perfectly well.

The lesion here was probably an early syphilitic basilar meningitis of sufficient severity to cause headache and also irritation, and possibly constriction of the third and eighth nerves where they pass through the meninges. The nervousness was also probably the result of meningeal irritation. After four combined intravenous and intraspinal treatments all symptoms entirely disappeared, the defective hearing was restored, and the inequality of the pupils was much reduced.

CASE IV.

A. B. G., aged 30, seen on February 15th, 1915. Hard chancre six years ago and took mercury for one year. Two years later his blood gave a negative Wassermann reaction. Between three and four months ago the left pupil began to enlarge, though in every other respect he was perfectly well. Present condition: Right pupil widely dilated 8.5 mm. and absolutely inactive to light and accommodation. Ocular movements and fundi normal. All other cranial nerves normal. All other reflexes normal. Blood: Wassermann reaction negative. Spinal fluid gives positive Wassermann reaction with minimum of 0.5 c.cm. Globulin test (Noguchi) positive. Cell count 80 mononuclears to the cubic millimetre.

February 18th, 1915. Intravenous neo-salvarsan 0.9 gram. Twenty minutes later blood was withdrawn, and eight hours later auto-salvarsanized serum given intraspinally.

April 2nd, 1915. Combined treatment as above, using salvarsan. Spinal fluid shows the same degree of reaction as on February 18th, 1915.

May 22nd, 1915. Combined treatment as on April 2nd, 1915. Spinal fluid: Globulin (Noguchi) test strongly positive. Wassermann reaction positive with 1.0 c.cm.

July 3rd, 1915. Combined treatment. Spinal fluid: Globulin (Noguchi) test positive. Wassermann reaction positive with 1.0 c.cm.

August 6th, 1915. Combined treatment, using diarsenol. Spinal fluid about the same as on July 3rd, 1915.

August 23rd, 1915. Combined treatment as on August 6th, 1915. Spinal fluid: Globulin (Noguchi) test weakly positive. Wassermann reaction positive with minimum of 1.5 c.cm. This shows a marked improvement since the last examination.

Clinically there has been absolutely no change in the degree of inequality of the pupils, though his health in general is excellent. It may be assumed that with the degree of pathological change in the spinal fluid further subjective and objective symptoms would eventually show themselves had no treatment been interposed. Treatment has made a marked improvement in the condition of the fluid. Further treatment is to be given with the intention of still improving its condition and preventing the onset of graver central nervous system involvement.

CASE V.

J. S. S., aged 30, seen on December 4th, 1914. Chancre seven and a half years ago. No history of secondaries. About seven months ago he began to feel nervous without cause. While walking quietly, even, he would gradually but rapidly be overcome with a sense of weakness, would perspire freely, and tremble all over. He would also have some vertigo, and often upon getting up in the morning he would become nauseated. He slept poorly, but had no pain other than a dull ache over the eyes and occiput, which he thought might be due to constipation.

On examination he shows fair physique and nutrition. The pupils are unequal, the left larger and more sluggish to light than the right. Both accommodate. All ocular and other movements normal. Heart negative, except for slight accentuation of the aortic second sound. Radial arteries fairly hard and tortuous. Lungs negative. Thyroid normal in size. The outstretched hands show a moderately fine tremor, not increased under purposeful movements. Reflexes: Those of the upper extremities are markedly increased; both knee-jerks absent. Tendo Achillis reflex very weak. Plantar flexion. Slight Rombergism. No anaesthesia or disturbance in thermal sensation. The gait is not definitely ataxic, though it is slightly hesitating, which he attributes to weakness.

December 5th, 1914. Intravenous salvarsan 0.6 gram, followed the next day with intraspinal auto-salvarsanized serum. Spinal fluid shows Wassermann reaction positive with minimum of 0.5 c.cm. Globulin (Noguchi) test strongly positive.

December 21st, 1914, combined treatment as above. Spinal fluid shows no improvement, but he says he feels, and he looks, better.

January 8th, 1915. Combined treatment as before. Spinal fluid still positive with 0.5 c.cm., and Noguchi globulin test still remains strongly positive, but much less so than on the former examination.

February 27th, 1915. Combined treatment. Spinal fluid: Wassermann reaction barely positive with 0.5 c.cm and strongly positive with 1.0 c.cm. Globulin (Noguchi) test positive, but much weaker than on the last examination.

March 25th, 1915. Combined treatment. Spinal fluid positive with 1.0 c.cm., and the Noguchi globulin test is very weakly positive. Result: His health in general has improved very much; he feels stronger, more confident, and is eager to

return to work. There are no changes in the reflexes, and the tremor of the hands, though considerably diminished, is still marked. Only five combined treatments having been given, with marked improvement, a continuance was advised, but he left the city. About six months later he again presented himself, with a return of his old symptoms. He also has had for the first time some lightning pains at infrequent intervals, and a few weeks ago he first noticed on the plantar surface of the foot a painless shallow ulcer. There is definite decrease of sensation to pin-prick over the soles. The spinal fluid gives a positive Wassermann reaction with 1.0 c.cm., and the Noguchi globulin test is stronger than on examination six months ago.

The involvement of the central nervous system is evidently extensive in this case, and already degenerative changes in the sensory tracts are present. There is also a syphilitic basilar meningitis causing nervousness, frontal and occipital headache, and the lateral extension to the meninges covering the cortex for the upper extremities probably accounts for the increased reflexes of the latter.

CASE VI.

H. D. K., aged 29. Primary syphilis nine years ago, followed by typical secondaries. Treatment was not commenced until he was in his secondaries. Took mercury regularly for one year. Three years ago he began to feel nervous, as he says, with headache at times, though not of a severe character. On examination: He is obviously worried over the state of his health (neurasthenia), and finds his work—that of motorman on a street railway—very fatiguing. He is a big fellow, of splendid physique and good nutrition. Pupils unequal, which he has never known before; the left being the larger and more sluggish to light than the right. Physical examination otherwise negative. Blood and cerebro-spinal fluid give negative Wassermann reaction. Cerebro-spinal fluid, however, shows marked increase of globulin (Noguchi).

November 3rd, 1914. Intravenous salvarsan 0.6 gram.
November 27th, 1914. Intravenous salvarsan 0.6 gram.
December 18th, 1914. Intravenous salvarsan 0.6 gram.
February 19th, 1915. Intravenous neo-salvarsan 0.9 gram, followed the next day by intraspinal injection of autosalvarsanized serum. Spinal fluid gives positive Wassermann reaction with 1.0 c.cm. Globulin test (Noguchi) strongly positive.
March 24th, 1915. Combined treatment as above. The globulin test is still positive, but the Wassermann reaction is negative with 1.0 c.cm.
May 4th, 1915. Combined treatment. Globulin test positive, and Wassermann reaction positive with 1.0 c.cm.
May 20th, 1915. Combined treatment. Spinal fluid shows very slight improvement since last examination.
June 9th, 1915. Combined treatment. Still very slight improvement of spinal fluid.
July 6th, 1915. Combined treatment. Slight improvement in spinal fluid.
July 30th, 1915. Intravenous salvarsan.
October 30th, 1915. Combined treatment. Spinal fluid shows very marked improvement. The globulin test (Noguchi) is only faintly positive, and the Wassermann reaction is negative with 1.5 c.cm.

After seven combined treatments the spinal fluid shows very marked improvement. The general health of the patient has improved. He no longer feels nervous. The dilated pupil is much more active, and has contracted perceptibly, though it remains still a little larger than the other.

CASE VII.

J. B., aged 34. Seen on April 21st, 1915. Indefinite history of syphilis eight years ago. Nothing happened until seven weeks ago, when diplopia suddenly came on, with dilatation of the left pupil as well. Wassermann reaction of the blood negative, though it is possibly due to the fact that he has been taking mercury and potassium iodide since the onset of symptoms.
May 14th, 1915. Combined treatment given. Spinal fluid shows positive Wassermann reaction with 0.5. c.cm. Globulin test (Noguchi) strongly positive.
June 4th, 1915. Combined treatment as above. Spinal fluid gives weaker Wassermann reaction than before, requiring twice as much fluid. Globulin test strongly positive.
June 25th, 1915. Combined treatment. Wassermann reaction of spinal fluid, and also the globulin content unchanged.
July 16th, 1915. Combined treatment. Spinal fluid remains unchanged. Clinically, there is marked improvement. The diplopia has considerably decreased, and the dilated pupil is more active, and slightly more contracted.
September 6th, 1915. Combined treatment. The spinal fluid shows marked improvement, the Wassermann reaction being positive with 1.5 c.cm., and the globulin test being very much weaker.
October 7th, 1915. Combined treatment. The spinal fluid is still somewhat improved.

After seven combined treatments the improvement is very marked, though there still remains some diplopia, and dilatation of the left pupil. The patient had to discontinue treatments for the present, though continued improvement could be confidently expected under further combined treatments.

CASE VIII.

R. P., aged 34, contracted syphilis in February, 1914. In the following month secondaries developed, which quickly disappeared with one intravenous salvarsan 0.6 gram. The blood Wassermann reaction was strongly positive. This was followed by maximal doses of grey powder daily for one year, during which time four Wassermann reactions of the blood proved negative.
April 17th, 1915. For some weeks he has had several small areas of leucoplakia on the margin of the tongue, which are regarded as trophic lesions resulting from an early syphilitic involvement of the central nervous system.
April 24th, 1915. Spinal fluid is under slightly increased pressure, is clear, gives a positive globulin test (Noguchi), and also a weak positive Wassermann reaction. Combined treatment given.
May 14th, 1915. The areas of leucoplakia had entirely disappeared within a week of the combined treatment. The same intravenous and intraspinal treatment again given. The spinal fluid now gives a negative Wassermann reaction and negative globulin test.

During regular and maximal dosage of mercury—following a single intravenous injection of salvarsan—for one year, the blood reaction remained negative though a progressive involvement of the central nervous system, probably of the nature of a basal meningitis, supervened, manifesting itself only as small trophic areas of leucoplakia on the tongue. A single combined intravenous salvarsan and intraspinal salvarsanized serum treatment was sufficient to eradicate promptly the leucoplakia and restore the spinal fluid to its normal condition. A second combined treatment was given to consolidate the good result, and the patient advised to have one or two more for the same reason. As he was on military service this could not be done at present.

REMARKS.

Of these eight cases, two (Cases III and VIII) showed early, and in Case VIII slight, involvement of the central nervous system within a year of the primary infection. Each had received during the secondary period a single injection of salvarsan, followed by maximal doses of mercury by mouth, without, however, preventing the onset and progressive involvement of the central nervous system. It may be presumed, therefore, that this treatment was inadequate. A single combined treatment by intravenous salvarsan and intraspinal salvarsanized serum in Case VIII sufficed to clear up the leucoplakia on the tongue and convert the pathological spinal fluid into a normal fluid. In Case III a progressing nerve deafness was arrested, hearing restored to approximately the normal, the eye condition much improved, and the headache and nervousness abolished. The general health was also markedly improved, so that he was able to enlist for active service. The spinal fluid became negative to the Wassermann reaction.

The other six cases were all of long duration, and showed various manifestations of the disease. In all the general health was markedly improved, and where headache and nervousness were present they disappeared. Shooting pains, present in three cases, were abolished. In all but one of six cases, eye changes—usually inequality of pupils—were improved. In one case of early tabes dorsalis the atonic bladder recovered, and the anaesthesia of hands and feet was remarkably improved.

In seven cases the butyric acid test (Noguchi) for globulin was diminished to a faint reaction, and in one it was entirely abolished. The Wassermann reaction became negative in six of the cases.

CONCLUSIONS.

The consideration of these eight cases from both a clinical and laboratory standpoint shows us that we have a powerful form of therapy in the combined intravenous and intraspinal treatment. Whether the improvement will be lasting in these cases time alone will tell. Though the results resemble very closely those of other workers using the same method, and claiming good results, I feel that this system of treatment is destined to undergo considerable change ere we arrive at an ideal method.

THE prefect of the province of Cagliari has issued an ordinance making compulsory the notification of leprosy in every stage. Suspected cases are to be detained for observation in the dermato-syphilitic clinic of the university. The houses and clothes of persons thus isolated are to be disinfected, and their families kept under observation. A pavilion of the Civil Hospital of Cagliari is set apart for cases with open sores.

NOTES ON A NEW ULCERATIVE DERMATO-MYCOSIS.

(With Special Plate.)

BY MAJOR ALDO CASTELLANI, M.D., M.R.C.P.,
MEDICAL SERVICE, ROYAL ITALIAN NAVY; CHIEF PHYSICIAN, ANGLO-SERBIAN MILITARY HOSPITAL, SOTORIOTISSA.

WITH REPORT ON THE CAUSATIVE FUNGUS

BY PROFESSOR E. PINOY,
PASTEUR INSTITUTE, PARIS.

SINCE 1907 I have come across in Ceylon a peculiar ulcerative condition which is clinically very characteristic. As to its hyphomycetic origin there cannot be any doubt, as from all the cases I have grown the same fungus. Cultures of this fungus have been given by me to Professor Pinoy, who has kindly investigated it botanically and classified it. The disease would appear to be present also in the Federated Malay States, as one of the patients stated that the ulcers had begun developing while he was employed on a Malaya plantation. This patient was seen by Dr. F. Grenier, who very kindly allowed me to investigate the case. I have recently observed a case of the same disease in the Balkans.

Etiology.

As a rule no hyphomycetic elements are seen microscopically in scrapings from the ulcers and contents of the nodules. If the material, however, is inoculated in glucose-agar tubes, small yellowish amber-coloured colonies appear four to eight days after inoculation; they enlarge fairly rapidly, become hemispheric, and often coalesce in a knotty mass. At times the colonies may not fuse together; each colony then remains separate, reaches a large size, and occasionally presents peculiar radiating furrows as seen in certain species of trichophytons. In many cases, when the material has been collected from ulcerated lesions, the fungus grows in symbiosis with a coccus, and it may be somewhat difficult to separate the two organisms. When the inoculations have been made from lesions not yet ulcerated, the fungus only is present. The disease has been easily reproduced in two coolies (who volunteered) by injecting cultures of the isolated fungus. Cultures used for such experiments must be recent, as old cultures apparently lose their pathogenicity. The experiments on this subject will be reported in detail later.

Botanical Description of the Fungus by Professor Pinoy.

Professor Pinoy of the Pasteur Institute has kindly investigated the fungus, a strain from a Ceylon case I supplied him with, and the following is his description:

"The fungus isolated by Professor Aldo Castellani belongs to the hyphomycetes or *Fungi imperfecti*, and is of somewhat difficult classification. I propose to include it in the genus *Accladium*, at least temporarily, and call it *Accladium castellanii*. The microscopic appearance on culture media (Sabouraud's agar, carrot) recalls somewhat the appearance of *Cladosporium herbarium*, with the difference that the colonies are whitish and amber yellow instead of being greenish-black. The growth consists of many small roundish masses which later on often coalesce, covered by spiculated formations consisting of erect, straight filaments parallel to each other or at times interlacing. These filaments are approximately 2 microns in diameter and carry laterally pseudoconidia of variable shape (Fig. 6, *s*), cylindriform, piriform, or spherical, attenuated in size at their points of insertion. Most of these pseudoconidia are 4 microns long with a breadth of 3 microns. This type of fructification recalls the type *Accladium* described by Bodin in some species of the genus *Trichophyton*. These pseudoconidia become detached and then develop by sprouting, and mycelial filaments are formed (Fig. 6, *a*, *b*, *c*). Certain filaments produce spherical chlamydospores (Fig. 6, *ch*) arranged in small strings as found in certain fungi of the genus *Fusarium*. These small chains of chlamydospores are very frequently terminal, the dimensions being variable—8 to 10 microns."

Symptoms.

In a well marked case ulcers are seen practically all over the body, though on the face, scalp, palms, and soles they are in small numbers or altogether absent. The ulcers are generally sharply defined, roundish or oval, with red granulating fundus. Their appearance is well shown by the photograph of the arm reproduced in the accompanying plate. In certain cases there may be abundant purulent secretion, and the ulcers are often covered by thick yellow crusts. Gummata-like nodules and furuncle-like lesions may also be observed. Some of the superficial lymphatic glands are often enlarged. The lesions are not as a rule very painful, and there is little or no itching. The general condition of the patient is not seriously affected for a long time, but he often complains of weakness, general discomfort, and is unfit to attend to his work. Occasionally there is serotine temperature. In two cases in which the blood was investigated red blood corpuscles and haemoglobin were slightly below the normal, and in one case there was eosinophilia (5 per cent.). This feature of the blood may, however, have been due to intestinal parasites, the stools containing eggs of ascaris. The urine did not contain either albumin or sugar.

The course of the disease is long, and if left untreated there is apparently not much tendency to spontaneous cure.

Diagnosis.

Most of the patients came to me with the diagnosis of syphilis, but in none of them except one was there a history pointing to that infection, and in two of the cases in which a Wassermann test was carried out the result was negative. Moreover, scrapings from the ulcers never showed spirochaetes, and salvarsan and mercury have no beneficial effect on the condition.

Prognosis.

As already stated, the course of the disease is very long, and there is little tendency to spontaneous cure; on the other hand, if properly treated, a complete cure can be obtained fairly rapidly.

Treatment.

Potassium iodide acts fairly well. It should be given in full doses, gr. xx, three or four times daily. The drug appears to act better if the patient is given a salt-free diet, as first suggested by Professor Pinoy in other dermatomycoses. If potassium iodide is not well borne, siodin and other similar preparations may be tried, but the result is not so satisfactory. Mercury and arsenic have no beneficial effect on the course of the malady. As regards local treatment, it is sufficient to keep the ulcers clean by dressing them with weak mercury perchloride lotion. Ointments are badly borne in most cases.

FURTHER EXPERIMENTS ON ASCARIS INFECTION.

BY F. H. STEWART, M.D., D.SC., CAPTAIN I.M.S.

I WISH to record some experiments made since the paper published in the BRITISH MEDICAL JOURNAL of July 1st was written. These experiments may still not be conclusive but they appear to be highly significant.

The first two have already been published in *Parasitology* of August of this year.

1. The rat, F, to which reference was made in my previous paper, was killed twelve days after the first infection and nine days after the last. No nematodes were found in the nasal cavities, mouth, trachea, lungs, or oesophagus. One dead ascaris larva was found in the stomach, a second, also dead and partially digested, in the rectum. The former measured 1.3 mm. after mounting in Canada balsam. Both were more advanced than the larvae from the lungs of other animals. They had doubtless undergone this further development under the stimulus of the intestinal secretions before they succumbed to the unfavourable surroundings in an inappropriate host.

2. Mouse B, killed on eighth day after infection with a single dose of eggs of *A. suilla*. Larvae measuring 1 to 1.5 mm. (in normal salt solution) in the trachea and lungs. No larvae in nasal cavities, liver, or alimentary canal.

3. Mouse C, killed on the night of the seventh day after a single dose of eggs of *A. suilla*; 50 to 60 larvae measuring up to 1.8 mm. in the lungs and trachea.

4. Mouse D, killed on eighth day after a single dose of eggs of *A. suilla*; 12 larvae in lungs. Largest measures 1 mm.

5. Mouse E, killed on eighth day after a single dose of eggs of *A. lumbricoides*. Not less than 100 larvae in roots of lungs and trachea.

ALDO CASTELLANI: A NEW ULCERATIVE DERMATO-MYCOSIS.

FIG. 1.—Glucose-agar culture of the fungus.

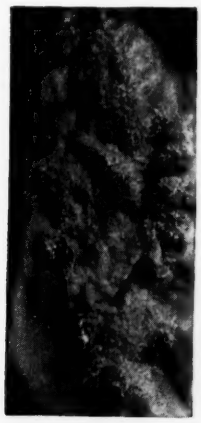

FIG. 2.—Glucose-agar culture of the fungus (older).

FIG. 3.—Glucose-agar culture; rare type of colony.

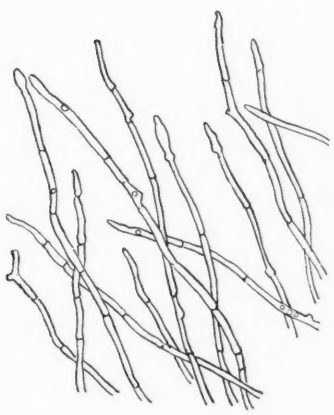

FIG. 4.—Microscopical appearance of the fungus in hanging drop culture twenty-four hours old.

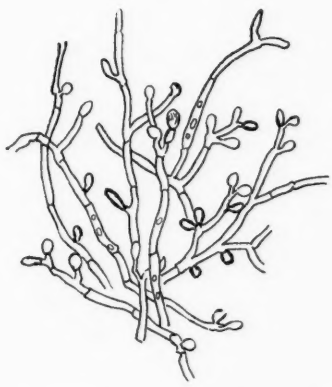

FIG. 5.—Microscopical appearance of the fungus in hanging drop culture three days old.

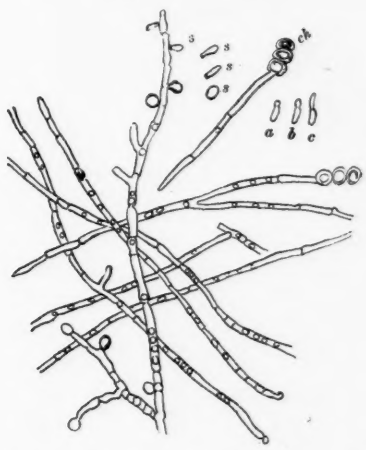

FIG. 6.—Microscopical appearance of the fungus in hanging drop culture five days old. *s* = Pseudoconidia. *a*, *b*, *c* = Development of mycelial filaments from pseudoconidia. *ch* = Chlamydospores.

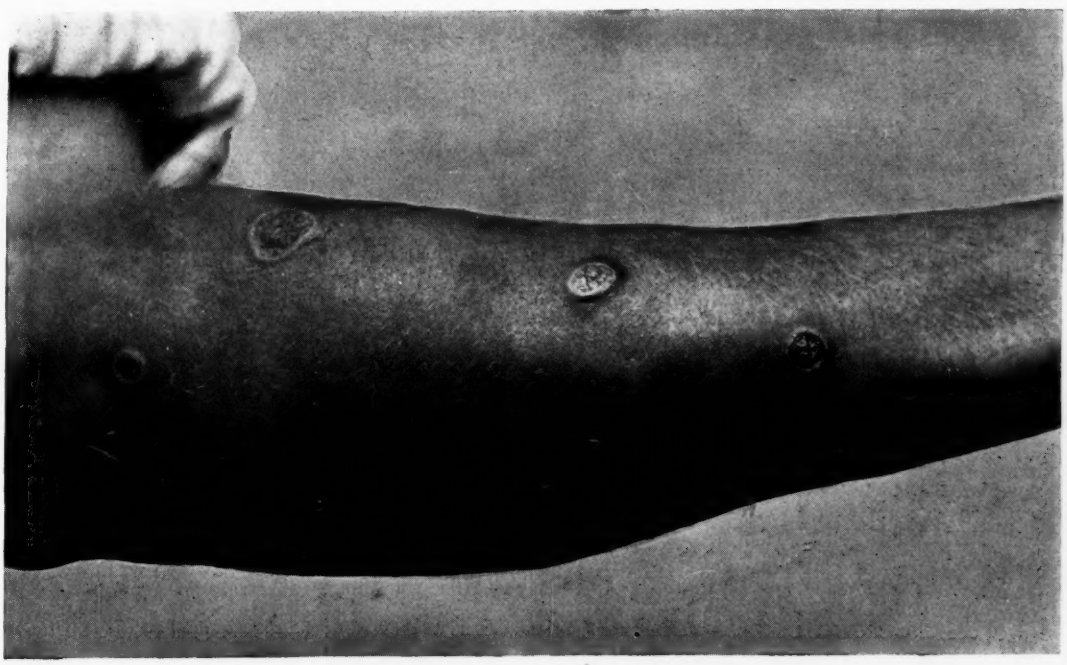

FIG. 7.—Photograph of arm showing typical lesions.

6. Mouse F, died in the night of the fifth day after infection. Not examined.
7. Mouse G, killed on eighth day after infection with *A. suilla*. Numerous large larvae in lungs.
8. Mouse H, ditto. A few large larvae in lungs. Two larvae in mouth.
9. Mouse J, died on the third day after infection with *A. suilla*. Not examined.
10. Mouse K, killed on the eighth day after infection with *A. suilla*. Larvae in lungs.
Mice L, M, O, P, Q, R, S died from epizootic summer diarrhoea. Not examined.
11. Mouse T, killed on eighth day after infection with *A. suilla*. No larvae found in lungs. It is possible that this mouse did not actually swallow the eggs offered to it.
12. Two mice were examined without infection. No larvae found in lungs or liver.

The larvae of *Ascaris lumbricoides* and *A. suilla*, therefore, appear in the bronchi, trachea, and mouth of the mouse and rat on the night of the seventh day and during the eighth day after infection. I believe that they will be found to emigrate actively in the saliva on to the food which is being nibbled by the rodent.

13. *Experiment on the Quantity of Saliva Expelled by a Mouse in the Act of Biting.*—A mouse was held in the hand and irritated until it bit the finger of the observer. The skin was not broken, but two considerable drops of saliva remained corresponding with the upper and lower incisors. Larvae might readily be expelled in saliva in this manner.
14. Rat A had recovered from an attack of ascaris pneumonia one month previously. Killed on eighth day after a large dose of eggs of *A. suilla*. No larvae found in lungs.

It is possible that one attack of ascariasis in rats protects against subsequent attacks.

Experiments were made to test the power of survival of larvae in the outer world.

1. A portion of lung containing larvae was placed on a lump of hard earth which was standing in water. The lung was above the surface of the water. On the first day following the portion of lung was lifted and the surface of the earth scraped. No larvae were found in the scrapings. Active larvae were found in a small portion of the lung. On the second day following there were no larvae on the earth or in the water. The portion of lung was commencing to putrefy; the larvae present in it moved languidly.
2. Larvae placed in tap water were dead after three hours.
3. Larvae were placed in a 4 per cent. solution of hydrochloric acid, 0.8 per cent. salt. After fifteen minutes one larva was observed to be furiously excited. After twenty-four hours the larvae were dead.
4. Larvae placed in normal salt solution were alive and active after three hours.
5. Larvae placed in mouse's blood were alive and very active after three hours.
6. Larvae in mouse's blood with a little normal salt solution transferred to a small fragment of cooked meat. A number were alive after four hours.
7. Larvae in blood transferred to bread kept in a moist chamber. Larvae were alive after twenty-four hours.

The larvae, therefore, cannot live in tap water; they can survive for twenty-four hours on damp bread, and for forty-eight hours in fresh meat (rat's lung).

These experiments strongly suggest that man is infected by contaminated food.

Experiments on Infection of Pigs from Rodents.

Experiment 1, Pig B, was recorded in the previous paper. It was negative. It is possible that the pig was too old for ready infection.

2. Pig C. The faeces had been examined repeatedly, and no ascaris eggs found. On April 15th a portion of infected rat's lung was given to it. On May 13th infected mouse's lung. On May 24th the faeces did not contain ascaris eggs. On May 30th and 31st infected mouse's lung was given. On June 4th no eggs in faeces; June 6th, a few eggs in faeces (twenty-four days after May 13th). On June 11th, 12th, and 16th many eggs in faeces. On June 21st infected mouse's lung was given. On June 29th pig killed, and four male and two female ascaris, apparently of the same age, were found in the intestine.
3. Pig D. April 17th, no ascaris eggs in faeces. April 28th, infected rat's lung given (five days after infection of the rat with *A. lumbricoides* from man). May 24th, no eggs in faeces. June 11th, no eggs in faeces. June 15th (forty-eight days after April 17th) and 17th, unfertilized ascaris eggs in faeces. June 17th, infected mouse's lung (eight days after infection with human ascaris) given. June 24th, pig killed. One large female ascaris found.

This can hardly be considered a very satisfactory experiment. *A priori* it would appear doubtful whether fifth-day larvae would be infective. The long time (forty-eight days) elapsing between infection and the appearance of the eggs in the faeces is also somewhat against the validity of this experiment. On the other hand, the delay may have been due to the absence of the stimulus of the male. If this experiment is valid, it is proved that the ascaris of man and of the pig are one species.

The presence in Experiments 2 and 3 of worms of one age only, after repeated doses of infected lung, raises the question whether the adult worms found originated from the larvae administered or from other and accidental infection. On the other hand, it is possible that one infection prevents subsequent infections. In collections of worms removed by anthelmintics or *post mortem* I have never seen worms of obviously different ages associated together.

4. Pig E. June 20th, no ascaris eggs in faeces. June 21st, infected mouse's lung (eight days after infection with ascaris from the pig) given. June 25th, no eggs in faeces. July 24th (thirty-three days after June 21st), many eggs in faeces. July 25th, pig killed, three male, twelve female ascaris in intestine.
5. Pig F. June 25th, no ascaris eggs in faeces. June 28th, infected mouse's lung (eight days after infection with ascaris of the pig) given. July 4th, no eggs in faeces, infected lungs of two mice given. July 7th, 8th, 10th, and 22nd, no eggs in faeces. July 27th (twenty-nine days after first infection), pig killed, no ascaris in intestine.

Out of five experiments, therefore, three gave positive results, two negative. In estimating the value of the negative experiments the very high mortality among the parasites employed under somewhat unnatural conditions must be kept in mind. To obtain an estimate of this mortality I compared the number of ripe eggs given to a mouse with the number of larvae found in the lung. An average dose of eggs consisted of about 5,000, the average number of larvae found in the lungs has certainly not exceeded 50—that is, only 1 in 100 survives. It must also be remembered that the transfer from the rodent to the pig must be the most vulnerable part of the life-cycle, since the larva is a very delicate organism.

Conclusions.

If ripe eggs of *Ascaris lumbricoides* are swallowed by rats or mice they hatch. The larvae enter the bodies of the rodents either by boring into venules of the portal system or by ascending the bile duct. They are found in the dilated blood capillaries of the liver between the second and fifth days. The larva is in diameter three times the diameter of a red blood corpuscle of the mouse. It cannot therefore pass through a normal capillary. The liver cells in the neighbourhood of the larvae undergo rapid degeneration. The larvae are thus enabled to work their way into the hepatic venules and pass by the hepatic vein and vena cava to the heart and by the pulmonary artery to the lungs. In the lungs they are filtered off at the entrance to the capillary field. Embolism of the arterioles takes place, and the larvae pass with the effused blood into the air vesicles. They are found in the air vesicles on the sixth day, in the bronchi on the seventh day, and in the trachea and mouth on the eighth day after infection. It is probable that they emigrate in the saliva of the rodent on to food substances, such as bread. It has been shown that they can live for twenty-four hours on damp bread. The experiments which have been conducted so far tend to prove that the larvae from the lungs of rodents can infect the pig, and it is probable that in nature infection of man and the pig takes place by food contaminated by rats or mice.

Controls on Experiments with the Pig.

Pigs A and B were kept in the same outhouse in which Pigs C, D, E, and F were afterwards kept. They were, however, fed in a different manner. Pig A, after three months, was found to harbour one ascaris; accidental infection was therefore proved to be possible. Rats and mice doubtless had access to this outhouse. That accidental infection was not frequent is proved by the case of B, which was kept here for seven and a half months without being infected.

Pig G was obtained at the same time as Pig E, on June 20th. On arrival its faeces were found to contain unfertilized ascaris eggs. On July 2nd 0.7 gram of areca nut was administered, which must have caused the expulsion of the worm, since on July 24th and 27th and August 4th and 10th no eggs were present in the faeces. On August 16th again no eggs were found. This animal was kept in the same compartment as Pig E and fed out of the same bucket, but had not become infected in one month and fourteen days.

Pig H was bought on June 26th with Pig F. It was kept in the same outhouse as the other pigs and fed in the same manner. Its faeces were found to be free of ascaris eggs; 0.7 gram of areca nut was administered to it on July 2nd. On July 3rd,

7th, 8th, 9th, and 10th the faeces were free of ascaris eggs. On July 16th very large doses of eggs of *Ascaris mystax* 10 days old and of *A. marginata* 7 days old were given to it. These eggs contained active vermiform embryos. On July 17th a second dose of the eggs of *Ascaris marginata* was given from the same culture now 14 days old. On July 22nd, 26th, 27th, and 31st, and on August 4th, 10th, and 16th the faeces were found to be free of ascaris eggs.

These cases of Pigs B, G, and H prove that accidental infection was not common under the conditions of the experiments and therefore greatly enhance the value of the positive experiments with Pigs C, D, and E.

The experiment on Pig H of administering ripe eggs of *A. marginata* and *mystax* was performed to exclude a somewhat remote possibility—namely, that the life-history of *Ascaris lumbricoides* (*suilla*) was highly extended and that *Ascaris mystax* (or *marginata*) was only a stage in the life-history of *Ascaris lumbricoides*.

Corrections.

1. In the summary of results in the paper published in this JOURNAL on July 1st the following sentence occurs: "Between four and six days after infection they (the larvae) are found in the blood vessels of the lungs, liver, and *spleen*." I have never found larvae in the spleen. The statement is due to a clerical error in the manuscript.

2. The following sentences also require correction: "On the tenth day they are found only in the air vesicles of the lung and in the bronchi." "On the sixteenth day the host is free from parasites." Further experiments proved that the larvae appeared in the bronchi on the seventh day and that no larvae were found in the respiratory tract later than the eighth day after infection. The inaccuracies were due to the use of repeated infection in the earlier experiments.

Experiments on Infection of Mice with Ascaris marginata of the Dog.

Mouse N. July 9th: Given eggs of *A. marginata* six days old, containing embryos. July 12th: Eggs nine days old. July 13th: Eggs ten days old. July 14th: Mouse killed; no larvae in liver or lung.

Mouse P. Died on the first day after infection with eggs of *A. marginata* eleven days old. Larvae present in the liver.

Mouse U. Killed on the first day after infection. Larvae in liver, none in lung.

Mouse V. Killed on the fourth day after infection. One larva found in liver, none in lungs or trachea.

The mouse is therefore the intermediate host of *Ascaris marginata* as well as of *A. lumbricoides*.

VACCINE IN MEDIASTINAL ACTINOMYCOSIS.

BY

W. S. MALCOLM, M.D.,

DUNDEE.

ONE cannot fail to be impressed by the increasing frequency with which one or other of the protean forms of actinomycosis is being recorded. This increased recognition is due not wholly to habitual examination of discharge or tissue, but largely to greater familiarity with the forms the ray fungus may assume in its life cycle.[1] The increase in the number of diagnosed cases gives an ampler field for improving treatment. Mr. Telford's article[2] on actinomycosis of the parotid, in which treatment by salvarsan met with success, illustrates what is meant, and adds another to the list of cases similarly treated. Certainly we are confronted at times by advanced or inaccessible actinomycosis where iodine locally cannot be employed, where massive dosage by potassium iodide[3] has met with limited success, where the disease is beyond the limit of surgical procedure. At such a time the only recourse is to a method by which we rely on the vascularity of the part ensuring the presence of the remedy at the seat of disease by introduction of a substance such as salvarsan, or by use of a vaccine. The employment of vaccine in the treatment of actinomycosis has been so rarely mentioned as to form an excuse for recording even a single case. The patient had actinomycosis at one of its less usual sites. It came to the body surface in the precordial region from the anterior mediastinum. Presumably the infection was air-borne, and inspired directly or indirectly from the mouth after chewing infected straw or grain. The fungus has been recognized at all the stages from the epithelium of the air vesicle through the visceral pleura adherent to its parietal layer or to the pericardium to the areolar tissue subjacent to the chest wall and to the subcutaneous tissue through intercostal spaces. This case presented a boggy swelling in the region stated. A shorter route for infection would have been through the skin, but there was no evidence in its favour. Languor, and pain on coughing were present before any swelling was observed, and the latter appeared from within outwards. The burden of *post-mortem* evidence and of the clinical history of similar cases favour the pulmonary route. There may be no initial cough, and no sputum[4] to attract notice in such cases, yet the oldest lesions are pulmonary.[5] Fortunately, one cannot confirm or refute one's conceptions of this case by *post-mortem* findings.

Though a radical operation involving rib resection had been successfully performed two years before this treatment was initiated, and iodide in maximum doses swallowed month after month and pound after pound, two sinuses continued to discharge, one of which was connected with a nodule on the pericardial surface. Collie's case[6] attracted attention to the potentialities of a vaccine, although Wynn[7] first of all, and others[8] [1] since have employed it.

Treatment was started by weekly subcutaneous injections of 2½ million actino-fragments. The dose was gradually increased up to 10 million. The latter was an overdose. The temperature gave no indication of this. No opsonic indexes were done. The patient's sensations proved a rough and ready index. Overdosage made him feel wretched and caused anorexia, and if one failed to recognize the importance of these symptoms and continued the overdose, a local reaction was set up, the nodule standing out in higher relief from the pericardial surface. This observation was verified, and on reverting to smaller doses the nodule receded, becoming flatter on each occasion. Ultimately 4 or 5 million was found to be an effective dose without bad effects, and this quantity was continued till about fifty doses had been given. The discharge soon lessened, the sinuses healed, the nodule in time could not be made out, and a "fullness" present in the parts disappeared.

Considerably fewer doses might have sufficed, but in view of the serious nature of the illness and the wish of the patient to "make sure of it" they were carried on. If records of other cases treated by vaccine were available they would prove of certain value. When confronted with the duty of applying this treatment one felt the lack of records to be a severe handicap. References to some of the other instances of pericardial involvement by direct spread are given.[9]

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POST-MORTEM FINDINGS IN A CASE OF EXOPHTHALMOS OF LONG STANDING ORIGINALLY DUE TO GRAVES'S DISEASE.

BY RONALD MACKINNON, M.B., CH.B.,

CAPTAIN R.A.M.C.(S.R.).

THE condition which produces exophthalmos in cases of exophthalmic goitre has never been clearly understood. It seems to me desirable that the following notes on a case in which all the other symptoms of Graves's disease had disappeared, but the exophthalmos remained to a marked degree, should be put on record:

J. B., aged 35 years, was admitted with acute lobar pneumonia (double) and died on the sixth day of the disease. There was nothing unusual about the illness during life or in the condition of the lungs after death. He had very marked exophthalmos of both eyes, together with external squint and cataract of the left eye. The eyeballs were sluggish in movement and the eyelids followed them without lagging. Winking was normal.

History.

Late in 1901, while he was in the Boer war, the graver signs and symptoms of exophthalmic goitre began to show themselves. He returned to England and was treated for three years, but made no progress. In 1904 he attended a clinic at Vienna. There he began to improve, and he continued his treatment till 1906, when all the graver signs and symptoms

had disappeared, except the exophthalmos, which persisted. He then went to Switzerland, where some practitioner assured him that he could cure the exophthalmos (which was very disfiguring) by injections into the eyeball. An injection was performed into the left eye, with the result that the sight of that eye was lost. However, he considered himself practically cured of the disease.

He was accepted for active service, and was able to carry out arduous and responsible duties during the first sixteen months of this campaign.

An examination was made of the eyes and the base of the skull to see if any definite anatomical cause could be found for the exophthalmos.

The body was thin, but not emaciated. The eyes were still prominent. There was no pigmentation of the skin. The fat was of a deep yellow colour.

The *thyroid* was normal in size, colloid appeared rather deficient. The two chief abnormal features recognized in microscopic sections of the gland were a marked vascularity and an increase of the glandular tissue at the expense of the colloid. The latter change was not so marked as in many typical cases of exophthalmic goitre, since a number of acini with thinned out peripheral cells and a fairly large central mass of colloid persisted. The greater part of the tissue, however, resembled an acinar gland, consisting of closely packed tubules with fine central lumina, many of which contained traces of colloid. The acini varied a good deal in size, and were lined with cubical or columnar cells, both being represented in one acinus in many places. The cubical cells predominated. The cells of columnar shape stained more heavily with haematoxylin and had the appearance of more recently formed elements.

The *thymus* was persistent but small. The spleen was normal. A small accessory spleen was present.

The *pituitary* and *suprarenal* glands showed no macroscopic lesions, and were normal in size and texture. There was no enlargement of the lymphatics, and the cervical ganglia showed no change.

The *heart* was normal, and there was no thickening, hardening, or dilatation of the blood vessels.

Lungs.—The right was solid and in the stage of grey hepatization; the left contained patches of consolidation. Both lungs were adherent from recent pleurisy.

The *parenchymatous viscera* showed cloudy swelling. This was verified microscopically in the case of the kidneys.

The *meninges* were considerably congested and slightly opaque. There was no bony deformity or tumour at the base of the skull, and the brain showed no macroscopic lesion.

On removing the supraorbital plates nothing unusual was found. Owing to the protrusion of the eyeballs, the retro-orbital space was abnormally deep. This space was filled with fat.

Inasmuch as the patient did not die till the sixth day of disease and the amount of lung involved was considerable, one is justified in considering that the pneumonia was an adequate cause of death.

I am much indebted to Captain J. W. Macleod, R.A.M.C., who did the histological work.

Note by COLONEL SIR WILMOT HERRINGHAM.

The interesting feature in this case is the persistence of the exophthalmos when all the other graver symptoms disappeared. We hoped that there would be some definite anatomical cause discoverable. In cases in which the disease is recent no satisfactory explanation of the proptosis has ever been given. It is at once remarkable and disappointing that even in such a case as this, where the disease has been of old standing, we have been unable to add anything to the knowledge already in our possession.

A UNIVERSAL LEG FRAME, SPLINT, AND CRADLE COMBINED.

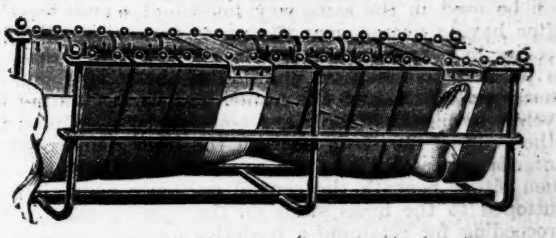
BY MARTIN J. CHEVERS, L.R.C.P. AND S.IREL.,
MANCHESTER.

IN the BRITISH MEDICAL JOURNAL of December 26th, 1914, I briefly mentioned a "universal combined leg splint and cradle," designed by me and made by Messrs. James Woolley, Sons, and Co., Ltd., of Manchester. I had then had it in frequent use for upwards of ten years, but I have since discovered so many further advantages in it that I feel justified in describing it more fully.

The splint consists of a galvanized metal frame, 32 in. long, 7 in. deep, and 9 in. wide; along the top on each side is fixed a row of brass studs, which serve to secure a series of ten straps. These straps, each 3 in. wide, are eyeletted, so as to be adjustable to half an inch; they are made of waterproof material, and may be sterilized by boiling.

The advantages I claim for the splint are:

1. It is adaptable to any size, shape, or length of limb or amputation stump, and removal of one or more straps when being used on either the anterior or posterior aspect of the limb allows of easy access to a wound wherever it is placed without disturbing the limb.



2. By removing a strap, heel pressure can be relieved.
3. Elevation of the limb can be attained by steady graduated support to the whole under-surface.
4. It can be used as a double inclined plane by regulating the straps.
5. One or more straps can be used over instead of under the limb or amputation stump in order to steady it.
6. If alternate straps are lowered nearly to the bed, but so that the leg still swings, and the others buttoned tense across the top of the splint the latter act as a bed cradle or as a rest for lotion trays or irrigation solution.
7. If any portion of the foot should project above the splint, an adjustable and detachable guard (∩-shaped) can be used; its legs fix firmly in holes placed at intervals in the upper parallel bars of the splint to remove the weight of the bed clothes at any required spot; this guard has a notch at the top, so that if the leg has been placed in another splint it can be suspended from the notch.
8. The waterproof straps are specially useful for keeping an ice-bag or dressings in place when the constriction of bandages is not advisable, or when excessively moist dressings are necessary, or where continuous irrigation is required (the receptacle being placed within the splint, underneath the suspended leg).
9. The splint, when the limb is suspended in it, is almost immovable by the patient on any ordinary mattress and covering; the leg can be placed in an abducted position and fixed extension applied by placing across the end perpendiculars of the splint a flat board containing a central perforation through which the extension loop can be passed and the loop retained there by passing through it one or more pieces of wood according to the tension required, counter-extension being attained by a graduated rise in the thigh straps towards the popliteal space. If required, fixed extension and counter-extension might be attained for the thigh if the upper end of the splint (that is, the U-shaped bar) is surrounded with Gamgee padding or spongiopilin, and made to act as the ring of a Thomas's knee splint.
10. The foot may be kept at right angles to the leg or valgus prevented by wrapping two or three turns of a bandage round the foot and making the ends fast at each side to the perpendicular or parallel bars.
11. For fractured patella I find the splint acts better than a Thomas's knee splint on account of the steadiness of the side bars, over or round which the bandages are passed, and across the front of the leg, keeping a firmer pressure on the pads placed above the upper fragment and below the lower fragment.
12. In cases of severe infection, where flush amputation has been necessary, skin traction in after-treatment is facilitated.
13. The waterproof straps can be made use of for a Thomas's knee splint; when passed round the bars they are secured by means of ordinary bone studs passed through the eyelets in the straps, attaining without any trouble perfect equality in the length of the straps—a matter of importance. I have used a Thomas's splint in conjunction with my frame, both on account of the protection the latter affords and for the purpose of suspending the Thomas's splint from the notch in the top of the ∩-shaped cradle guard.
14. The disturbance caused by putting on and taking off bandages, the heating and constriction of the limb which may be the result of bandaging can all be entirely done away with, the straps being used instead; they

retain a dressing in place at any point, whether anterior, posterior, internal, or external. In order to retain an anterior dressing the centre of the strap is placed on the dressing, and the extremities are passed beneath the middle side parallel bars of the frame, and then upwards to be buttoned to the studs of the upper parellels according to the tension required (or a bandage can be used in the same way, knotting the ends together after having passed over the upper parallels). The proceeding in order to retain an internal or external dressing in place is to first pass one end of the strap round the centre parallel bar of the frame, and fix by uniting the eyelets by means of ordinary bone studs, then pass the other end of the strap beneath the limb round over its anterior aspect back to the same side of the frame, and then either beneath the central or upper parallel to be buttoned to the brass studs on the upper parallel. The proceeding for retaining a posterior dressing requires no explanation.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

CASE OF SPONTANEOUS RUPTURE OF SPLEEN: SPLENECTOMY: RECOVERY.[1]

E. H., aged 44, was admitted to the Princess Christian Hospital, Weymouth, on March 8th, 1916, with a bad septic hand, which required several incisions, and eventually the removal of the first finger.

He had had a bad attack of syphilis twenty years earlier, for which he was treated at a lock hospital in London for six months.

He was getting on quite well, and had been allowed up and about for several days, when on the morning of April 21st, while trying to get out of bed to dress, he felt an acute pain in the epigastrium. He was reported to be perspiring freely; clammy, very pale. The temperature was subnormal, the pulse about 60, and the respirations 24.

When I saw him about 10 a.m. the epigastric region was tender and slightly distended. The liver dullness was diminished, and the apex beat displaced upwards. He was very pale, and evidently in a good deal of pain. The pulse was 90. Drs. Macpherson Lawrie and Nuthall saw him with me later, and we decided to operate if his condition did not improve.

After midday his pulse began to get rapid and weak, and his condition evidently worse. The pulse rose to 120, and, with Dr. Lawrie's help, I opened the abdomen to the right of the middle line. On opening the peritoneum there was a gush of bright blood, which continued in large quantities, swamping everything, and making it for the time impossible to find out from where the bleeding proceeded. I put my hand over the stomach, and was able to feel a mass of clot under the left lower ribs; three handfuls of clot were removed from this region. While doing this I felt the spleen, and found an irregular tear on the anterior surface, from which steady oozing was proceeding. Grasping the spleen, I pulled it up to the wound, and immediately the bleeding stopped. The patient was by this time *in extremis*. The splenic vessels were ligatured and the spleen removed, the abdominal wound stitched up quickly with through-and-through stitches, leaving about one quart of saline in the abdominal cavity.

He was given ½ c.cm. pituitrin on the table, and every four hours after till 10 a.m. next day. Strychnine $\frac{1}{60}$ grain was also given every four hours, and he also had continuous saline by the rectum for twenty-four hours, by which time he had absorbed four pints.

After the first twenty-four hours he gave very little anxiety, and the wound healed by first intention. He left the hospital during the first week of June.

Dr. Nuthall kindly examined his blood on June 25th, and reported:

Red cells	4,910,000
White	7,720
Haemoglobin	75 per cent.

It is difficult to say what the cause of this serious condition could have been. Unfortunately, the spleen was not examined; it was not enlarged, but was certainly friable, my fingers easily making holes in it when grasping.

Was the condition due to syphilis, or to the septic condition, or both combined? He had never contracted malaria.

Weymouth. JAMES MILLER, M.B., CH.B.

[1] The patient was shown at the meeting of the Dorset and West Hants Branch of the British Medical Association on July 19th.

Reviews.

TYPHOID AND PARATYPHOID FEVERS.

TYPHOID fever has long been known as the scourge of armies in the field. Possibly the paratyphoid fevers A and B have equally ravaged armies in days gone by, but of this we have no certain knowledge. We do, however, know that these two infections have been abroad among the combatants during the last two years of war, and that they have given rise to a considerable amount of sickness among the fighting troops of all the nations involved, although that amount has been far less, thanks to protective inoculation and hygienic precautions, than was expected. Drs. VINCENT and MURATET[1] have recently published an admirable account of the three fevers, with full clinical descriptions of the various forms they may take and the complications to which they may give rise. Their book is based largely on the recent work on these fevers published in Europe and elsewhere, but, as is perhaps natural, its data have been collected mainly from the observations of the French military physicians. A very interesting chapter is that in which the differential diagnosis between typhoid fever and the two paratyphoids is considered. The authors remark on the comparative shortness of the incubation period in paratyphoid fever, a matter of at most from nine to fourteen days, but often less than a week; in typhoid fever the incubation generally lasts from a fortnight to sixteen or twenty days, and may be as long as five or six weeks. The onset is usually more abrupt in paratyphoid than in typhoid fever, with rigors and vomiting, occipital headache, and often an eruption of herpes on the face, lips, or buccal mucous membrane. In paratyphoid fever there are often heavy night sweats; rose spots appear in some 60 per cent. of the patients, and may recur for days after the defervescence; moreover, signs of meningism are relatively common. Constipation is the rule in paratyphoid fever, and it is said that the liver as a rule becomes enlarged during its course. In general, paratyphoid fever lasts less long than typhoid, and the patients are not nearly so ill; the temperature rarely rises above 104° F., and, as was pointed out by Torrens and Whittington (BRITISH MEDICAL JOURNAL, 1915, vol. ii, p. 697), the temperature chart often exhibits a certain spikiness. So far as the mortality of the three fevers goes, the death-rate for adults in typhoid is said to be from 11 to 14 per cent., though it is considerably higher in the second half of life. Merklen and Trottain recorded 10 deaths in 356 cases of paratyphoid A and 5 in 90 cases of paratyphoid B; among 2,725 cases of paratyphoid fever Sacquépée found 41 deaths recorded—a mortality of 1.5 per cent. Cases of every degree of severity occur in both paratyphoid A and B; the milder cases often escape recognition, being diagnosed as indigestion or "gastric fever." Death, when it does occur, is most often due to bronchopneumonia, intestinal haemorrhage or perforation, toxic absorption, collapse, uraemia, or meningitis. Relapse occurs with equal frequency—in 10 per cent. or so of the cases—in each of these infections. The complications that may be observed are identical. There is, it seems, no radical difference between typhoid and paratyphoid fevers from the clinical point of view; the differential diagnosis must be made either (and preferably) by cultivating the infecting bacillus from the patient's blood or by special agglutination tests. The ophthalmo-diagnosis of typhoid fever as distinguished from paratyphoid, proposed by Chantemesse, does not furnish trustworthy results.

A full account of the epidemiology of typhoid and paratyphoid fevers is given by Drs. Vincent and Muratet; they attach great importance to fatigue as a cause predisposing to its acquisition, and also to excessive heat,

[1] *La fièvre typhoïde et les fièvres paratyphoïdes (symptomatologie, étiologie, prophylaxie).* Par H. Vincent et L. Muratet. Collection Horizon, précis de médecine et de chirurgie de guerre. Paris: Masson et Cie. 1916. (Cr. 8vo, pp. 189; 97 figures. Fr. 4.)

because it increases fatigue. The dangers of the urinary typhoid carrier and paratyphoid carrier to the community are pointed out; to a large extent, as Dr. Vincent has pointed out, these fevers are diseases due to dirty hands. A chapter at the end of the volume gives a good account of what has been done in recent years to lessen the incidence of typhoid and paratyphoid fevers by preventive inoculations; the triple vaccine ("T.A.B.") protecting against all three infections is recommended for the present conjuncture.

ELECTRIC TREATMENT OF GONORRHOEA.

IN a small book entitled *A New Treatment for Gonorrhoea*[2] Dr. RUSS has published an account of his electrolytic treatment, a note on which has already appeared in this JOURNAL (June 12th, 1915). The treatment is based on the fact that bacteria suspended in salt solution are attracted to the positive pole of a constant electric current passed through the fluid, and also killed. The apparatus used consists of a perforated platinized or rubber catheter furnished with a platinum stylet and a rubber collar which fits the meatus. The catheter is filled with a 2 per cent. solution of sodium iodide, and the stylet is connected with the positive pole of the battery. A lint-covered pad lined by a flexible metallic core and wrung out in warm saline solution is applied to the perineum and scrotum, and connected with the negative pole. A current of 1 to 3 milliampères is passed for ten minutes, and then reversed for another ten minutes. When the catheter is withdrawn, masses of muco-pus containing numerous dead gonococci protrude from the perforations. Pus cells are also attracted to the positive pole, and in this way the glands and follicles of the urethra are said to be emptied of their contents. The patient should have a full bladder, and pass half the urine before and half after the treatment. The treatment is repeated every day till the discharge is slight, and then every other day till it ceases. Acute gonorrhoea, in the author's experience with over 70 cases, is cured after from ten to twenty-two applications. The method is also applied to the posterior urethra by means of special catheters in cases of chronic gonorrhoeal urethritis, and is continued till the urethral filaments are free from pus.

This form of treatment merits further attention, as it is both scientific and ingenious. Instead of attacking the gonococci in their strongholds by means of bactericidal agents, which too often do not reach them, they are lured, so to speak, from their entrenchments by electrolytic action. In the introductory part of his book Dr. Russ makes some interesting remarks on the theory that gonococci remain dormant for long periods and then revive. He asserts that it is untenable owing to the fact that it is only spore-bearing organisms that are capable of a resting or dormant stage. The gonococcus, which has no spores, "is either dead and quickly excreted or alive and multiplying; and in the latter case it is always associated with pus formation, varying from a profuse discharge to a small group of leucocytes in a urine thread."

NOTES ON BOOKS.

DR. BATTEN'S Lumleian lectures for 1916 give a full and up-to-date account of *Acute Poliomyelitis*,[3] or infantile paralysis, its nature and treatment. The first chapter deals with the epidemiology of this widespread disease; the first epidemic, a small one in Sweden, dates back only to the year 1881. The incubation period may be a matter of hours only, but is usually from one to four days. The disease rarely occurs or spreads in institutions, unlike the other acute specific fevers of children. Particular attention is given to the many small epidemics of the disease that have occurred in Great Britain, the first dated 1897. Dr. Batten gives a good account of the morbid anatomy of acute poliomyelitis and the experimental work to illustrate it. The clinical manifestations of the disease are described fully and with great clearness, and a satisfactory account of the treatment, the least satisfactory part of the affection, follows. These lectures are well illustrated, and contain a vast amount of useful information.

[2] *A New Treatment for Gonorrhoea.* By C. Russ, M.B.Lond., M.R.C.S.Eng., L.R.C.P.Lond. London: H. K. Lewis and Co., Limited. 1916. (Demy 8vo, pp. 45. 3s. net.)

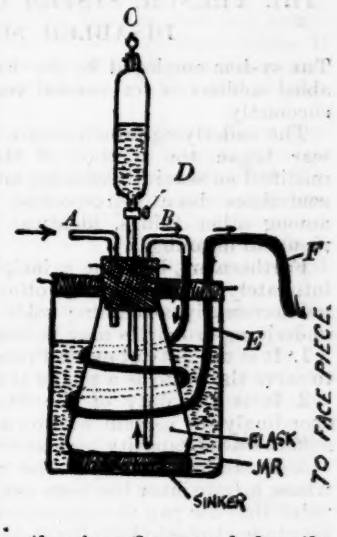
[3] *Acute Poliomyelitis: Its Nature and Treatment.* Being the Lumleian lectures delivered at the Royal College of Physicians, London, 1916, by F. E. Batten, M.D., F.R.C.P. Reprinted from *Brain*, London, 1916, xxxix. For private circulation.

MEDICAL AND SURGICAL APPLIANCES.

A Warm Ether Apparatus.

DR. JOSEPH W. BIGGER, M.B.Dubl. (Sheffield), writes: In the BRITISH MEDICAL JOURNAL of August 19th an apparatus for the administration of warm ether vapour was described. On testing the apparatus we found that, while it was successful in the case of women and children, it frequently failed to keep a vigorous man anaesthetized. One of the reasons for this seemed to be that the cold air, entering very cold ether, was unable to carry with it enough ether (either in the form of vapour or droplets) to the warming coil to produce a sufficiently rich vapour under the mask. By warming the air before allowing it to bubble through the ether, an attempt to obviate this difficulty was made, but without much success. In addition, it was felt that the continual pumping of air (especially with a Higginson's syringe) was an unjustifiable labour for the anaesthetist and a serious matter if he had to administer anaesthetics for several hours daily; the use of the foot in place of the hand did little to lessen the work. So it was decided to utilize the patient's own lungs and to make him suck in the etherized air instead of pumping it to him. This necessitated a tight-fitting face-piece with a valve for expiration. The problem of how to vaporize a sufficient quantity of ether was also tackled and the following apparatus was fitted up.

A large conical flask (500 c.cm. capacity) is fitted with a three-hole rubber stopper. Through one hole passes a short glass tube (A) by means of which air enters the flask. Another glass tube (B), which passes through the second hole, reaches almost to the bottom of the flask. By this tube the air and ether vapour leave the flask. The third hole carries the tube from the ether container (C) which is merely a dropping funnel, such as is used in chemical laboratories. The container holds 8 oz. of ether and is provided with a stopcock (D) by which the amount of ether entering the flask is regulated. The free end of the glass tube (B) is fitted with about 3 ft. of rubber tubing (E) which is coiled round the flask. The object of this is thoroughly to warm the air and vapour before the mixture reaches the patient. The flask with its encircling coil fits into a large earthenware jar. The neck of the flask is tightly fitted through a hole in the cork of the jar, which has in addition two smaller holes—for the entry and exit of the warming coil. The flask, coil, and cork of the jar form one unit, so that the whole can be lifted easily from the jar. The flask has a heavy lead sinker attached to it by means of cords to prevent it floating in the water of the jar. The distal end of the warming coil (E) passes to the face-piece which is a nitrous oxide inhaler without the bag. The free end to which the bag was formerly attached is fitted with a rubber stopper through which a short piece of glass tube passes and the rubber tube is connected to this. The internal flap-valve of the inhaler is removed, but the external flap-valve, which allows expiration but prevents inspiration through it, is left in place.



The method of using the apparatus is this: The flask, cork and coil unit is removed from the jar which is then half filled with hot water from the tap and the unit replaced. The ether container is filled with ether and the mask closely applied to the patient's face. After a couple of breaths have been taken the stopcock is turned on so that ether drops into the flask at the rate of one or two drops a second. This ether is almost immediately vaporized in the hot flask and air mixed with vapour is drawn in by the patient through the coil to the mask and so to his lungs. It should be noticed that the tube of exit from the flask is near the bottom, while the entry tube is close to the top, for ether vapour is much heavier than air. The richness of the mixture reaching the patient is regulated by (1) the amount of ether allowed to drop into the flask; and (2) the metal slide valve at the top of the inhaler unit by which pure air can be admitted to any extent desired.

Anaesthesia is usually induced by chloroform, as this is both more rapid and pleasanter, and as soon as the patient is "under" the mask is substituted; but the apparatus may be used from the beginning (I have used it in this way with complete success); or nitrous oxide may be used for induction by means of a three-way tube fitted to the inhaler instead of the direct tube described.

By using this apparatus, rebreathing (as in Clover's inhaler) is eliminated. Fresh air and ether vapour are taken into the lungs at each breath.

Our experience has hitherto been limited, but I have described the apparatus in the hope that others interested in the subject of warm ether may give it a trial. We have had no cases of ether bronchitis or pneumonia following its use, whereas, in many cases where the method of dropping ether on a gauze mask was used, the subjects were "chesty" for several days after operation. The saving of ether by this method as contrasted with the "open" method is remarkable and not to be ignored.

I am not aware of any similar apparatus having been described before, but if it has I must apologize to its author for my unconscious plagiarism. I have to express my thanks to the honorary surgical staff of the Royal Infirmary for permitting me to experiment with my apparatus, and to my colleague, Captain N. J. Wigram, R.A.M.C.(T.), for his helpful criticisms and suggestions and also for the accompanying diagram.

THE FRENCH SYSTEM OF DEALING WITH DISABLED SOLDIERS.

THE system employed by the French in dealing with disabled soldiers is for several reasons difficult to describe succinctly.

The underlying principles are of old date, but since the war began the method of their application has been modified on several occasions, and the modifications have sometimes been retrospective, sometimes not. Hence, among other things, identical terms have not always identical meanings.

Furthermore, both the principles and the methods are intimately bound up with other principles and systems not necessarily concerning soldiers. Taken together, the underlying principles may be described as follows:

1. It is the duty of every French citizen of military age to serve the State as a soldier if required.

2. It is the duty of the State to compensate correspondingly any servant who, owing to performance of duty, suffers loss of capacity for self-support.

3. It is also the duty of the State to assist any family whose breadwinner has been summoned to its service, provided that the pay of such servant is insufficient to enable him to continue to help his family himself and that such help is absolutely required.

4. Furthermore, such responsibility does not end with the servant's life.

The methods based on these principles are in general terms as follows:

CALLING UP.

A list of all men of military age or shortly to reach it is maintained in all French parishes and those whose names figure in it must present themselves whenever required to do so by the officers in charge of the lists. They may be able to show that on one ground or another they are not liable to serve; but otherwise if their services are required they are examined as to their physical fitness for military duties.

Such examination may have four different results. (1) The man may be *ajourné* or put back for a time because, in point of physical development and strength, he is still a long way below the average of young men of his age, or (2) *exempté* because considered permanently unfit for any form of service whatever, or (3) accepted as fit for one of the auxiliary services, or (4) classed as fit for general service.

Formerly a man twice *exempté* was permanently free from all military obligations, but now an *exempté*, as also a man classed as only fit for an auxiliary service, is liable to be re-examined every three months. In general terms an auxiliary service may be described as any work for the army which can be done indoors, or which does not involve the carriage of arms.

For the guidance of recruiting medical officers the Minister of War has issued a code prescribing the way in which the examination should be conducted and the points which should govern the classification of any given individual.

INVALIDING.

The question of the right classification of a man again arises if he is discharged from some medical unit after treatment for a wound, injury, or illness.

[In addition to hospitals for acute cases, the French have also hospitals for chronic and more or less convalescent cases, as also places which are a kind of a cross between the divisional rest camps of the British army and its base convalescent dépôts.]

He is then again examined and put into one of the following classes:

A. Fit for general service.
B. Temporarily unfit for general service.
C. Fit for one of the auxiliary services.
D. Permanently unfit for any service.
E. At present unfit for any service.

Men of A class, after being given a short period of leave, are passed back to their units through the ordinary channels. Men of B and C classes are also given leave, and are then assigned to a physical training camp or an auxiliary service. They are re-examined from time to time, and as soon as found fit for general service are reclassified. The fact that a man is assigned to an auxiliary service does not diminish any claim to compensation on discharge which he might otherwise possess.

Men belonging to class D are those rendered unfit for service by some such clearly irremediable cause as the loss of one or both eyes, the amputation of one or more limbs, or complete and hopeless loss of the use of one or more limbs. Such men, in virtue of a law passed long before the war, are as soon as possible discharged from the army as medically unfit, provision being made for the future in ways to be described later on. These men used to form the class known as *Réformé No. 1.*

Men belonging to the E class are those whose illness or injury has left behind it some physical defect or infirmity which unfits them at present for any form of service, but which may or may not diminish or disappear.

These men used commonly to be allowed to return to their homes on sick leave lasting sometimes as long as six months or were released from all military obligations for a year. In the former case they continued to draw the pay of their rank, and, if privates, about one franc a day as food allowance. In the latter they received a small temporary pension. In either they were free to seek or not to seek civilian hospital or other treatment and to engage, if they pleased, in their old or any other work they could do.

Those released from all duty for a full year and then found on re-examination to be still unfit for service were generally permanently invalided, and if their disability was brought about, or had been materially increased, by the performance of duty, received an allowance as long as their disability remained. The result in either case was that the man became known as a *Réformé No. 2.*

But these methods of dealing with men of class D, though not entirely disused, are no longer in favour, except when the men concerned require for their recovery little beyond prolonged rest and comfortable surroundings, or, on account of their status outside the service, can be relied on to secure for themselves any form of treatment required.

All the rest are now usually drafted to dépôts established near therapeutic institutions of various orders: hydropathic, neurological, physiotherapeutic. At these dépôts the men are treated like ordinary soldiers, but are practically relieved from all duty other than that of sedulously carrying out the treatment prescribed for them at the institutions to which they are assigned. In their spare time they are at liberty, if they choose, and if it does not interfere with their treatment, to attend any school in the locality which purports to teach men new trades, or how to carry on already familiar trades despite their disabilities or infirmities whatever they may be.

Such re-education schools are usually maintained either by private philanthropy or by the public authority of the locality in which they are situated. Attendance at them

is always both voluntary and free, and apart from other advantages they offer the attraction of acting as labour bureaux for partly disabled men.

A man drafted to one of these dépôts continues to be treated at the institution to which he has been assigned until its authorities come to one or other of the following decisions:

1. That the case should be sent to an institution of a different order.
2. That his infirmity has so improved that he is again fit for general service or for one of the auxiliary services.
3. That his infirmity cannot be further decreased by any form of active treatment whatever.

Decision 1 receives due attention, and decision 2 leads to the man being relegated, after a course of ordinary physical exercises, to class A or class C.

All the rest go before an invaliding board, which again reclassifies them. Such board, if in any given case it considers that the remaining disability is (1) the direct outcome of the performance of military duty or has been materially increased thereby; and (2) in extent is appreciable because equal to a loss of more than 10 per cent. of working power; and (3) will certainly persist at least a year, proceeds to draw up a report recommending, with a precise statement of all the reasons, the temporary or permanent invaliding of the man and the grant of either a pension or a renewable allowance. It only recommends the former if it feels certain that lapse of time will not lessen the disability in any respect whatever. If the case of any man does not meet all the conditions named, the Commission simply recommends him for permanent or temporary discharge, adding nothing on the subject of the grants.

Whatever its terms may be, the report of the board is sent to a consultative commission in Paris, which, after studying it, either refers it back for further information or reconsideration or forwards it to the Minister of War, advising that the recommendations be confirmed by a decree. The decree issued, the man becomes a *Réformé No. 1* if granted a pension or renewable allowance, and a *Réformé No. 2* if granted neither. As a rule, no one is invalided for less than two years, and every man not permanently invalided is liable to be re-examined and reclassified at the end of that time, and is certain to be so if he has been granted a renewable allowance. Also on such re-examination will depend whether his allowance is withdrawn, left at the same amount, diminished or increased, according to the condition of his disability as compared with what it was at the time he was invalided. Such examinations are repeated every two years, the allowance being converted into a fixed pension if an appreciable disability is still found at the fifth re-examination.

The oldest and largest of the physiotherapeutic institutions to which reference has been made is the Grand Palais Clinique in Paris, and the result of its work may perhaps be taken as a fair sample of that of the system as a whole.

It is claimed that in addition to the great military gain represented by the large number of men whom it has rendered fit to resume army work of some form or kind, its existence is of very great value to the Financial Minister. It has been claimed, in fact, that the financial gain from the working of this institution during the first six months of its existence is equal to a capital sum of about £800,000. This estimate, of course, is mainly based on the fact that the allowances and pensions that have to be allotted shrink *pari passu* with the extent to which the infirmities of the patients passing through the clinique are diminished by the treatment administered.

Pensions and Allowances.

Men invalided out of the service as belonging to class C receive one or other of four rates of pension according to the severity of their disability, and can claim admission to certain Government institutions and preferment for certain civil appointments. They are also entitled to be kept provided with artificial limbs, etc., and the blind to be taught suitable trades.

The pension rates are primarily founded on the amount the man concerned would have received if he had served as a soldier throughout the whole of his life, but if his disability is one which necessitates the services of an attendant, the highest superannuation rate is increased in the case of soldiers by 30 per cent. and in the case of officers by 20 per cent.

The net result is that in the case of privates the highest rate of pension is about £40 a year, and the lowest about £24 a year. But there is some talk of these rates and the rates of all allowances being raised.

A renewable allowance, on the other hand, may be any one of eight rates, the highest equal to the simple maximum of the superannuation rate and the lowest a proportional part thereof. The rate assigned depends mathematically on the degree to which the working capacity of the individual concerned is deemed to be reduced by his infirmity below that of an average healthy man. For the guidance of invaliding boards there has been issued by the Ministry of War a code which is based on the experience of civil life and indicates the percentage of loss of working power considered to be represented by almost every conceivable medical or surgical infirmity.

Unlike an allowance, a pension cannot be reduced even if it be subsequently found that the supposedly irreparable disability has improved or disappeared. On the other hand, a higher class of pension can be successfully claimed if within five years of the original grant the pensioner can satisfy the authorities that his disability has increased.

Family Considerations.

The effect of the award of a pension does not necessarily end with the pensioner's life. His descendants, if he leaves any, or even in certain circumstances his ascendants, can claim to be allotted a portion of the pension drawn by him.

A pension, moreover, is in any case drawn by the widow and children of a soldier who dies from wounds received in the performance of duty or of disease contracted in the same circumstances. It amounts to about three-quarters of the maximum pension which would have been awarded if the deceased man had served as a soldier for the longest possible period, or in the case of the family of a deceased soldier to about £21 a year.

If the widow remarries, half her pension is reserved for the benefit of the children by her first marriage, if any, and half for the benefit of herself and any children by her second marriage. She can, if she chooses, commute her own half into a lump sum, which then constitutes a kind of dowry.

The pay drawn by a private is only 25 centimes a day, so arrangements for the benefits of the families of soldiers, whether permanently in the army or temporarily mobilized, have always been necessary, and at the beginning of the war those previously existing were somewhat modified. The allowance now made to the person who represents the head of the family in the soldier's absence is at the rate of 1 franc 25 centimes a day, with an addition of 50 centimes daily for every child under 16 years of age. Any person claiming these allowances on behalf of a family must prove beyond doubt that it was dependent for its maintenance on the labour of the absent soldier. Once this has been done, the allowance granted cannot be withdrawn until the end of the war, unless either the soldier dies and the family receives a pension; or the soldier is released from service, with or without a pension or allowance, and is proved to have found and to be able to retain employment which renders him quite as capable of supporting his family as before he was called up for service.

Finally, it should be added that the person treated as the head of the absent soldier's family (if any) is not necessarily his wife; and that for a claim for a family allowance to be successfully made it is not necessary that the children should be legitimate. It appears, in fact, that in certain circumstances even a pension can be successfully claimed on behalf of illegitimate children.

BRIGADE SURGEON-MAJOR E. A. GIBBON, R.A.M.C. (retired), High Sheriff of co. Wexford, left personal estate in the United Kingdom of the gross value of £32,989.

THE United States Public Health Service has set on foot a campaign against hay fever. An endeavour will be made to induce legislatures to enact laws to provide means for the destruction of weeds which are known to cause the disease. It is said that 2 per cent. of the population of the United States suffer from hay fever.

THE MIDDLESEX HOSPITAL MEDICAL SCHOOL.

THE winter session of the Middlesex Hospital medical school was opened by an address by Surgeon-General M. W. Russell, C.B., Deputy Director-General of the Army Medical Service (War Office). It was, he said, not inappropriate that an old student whose time had been spent in the military forces of the country should be the spokesman on that occasion, and his subject, the historical relation of the hospital and school to war and the military forces, was equally appropriate.

He first recalled the fact that during the revolutionary wars in France the hospital placed at the disposal of refugees who reached this country destitute and broken in health a ward or wards, in which some thirty or forty persons, mostly priests, were housed and restored to health and vigour. An expression of their appreciation of the kindness and hospitality shown to them was on record.

The first great name connected with the hospital which shone with undiminished renown in military surgery was that of Sir Charles Bell. He left Edinburgh for London in 1804, and five years later went to work at Haslar Hospital among the sick and wounded from Sir John Moore's Corunna army. In 1812 Bell was appointed surgeon to Haslar Hospital, and it was while holding that post that he went to Brussels to work among the wounded from Waterloo; the Royal Army Medical College possessed a priceless memento of his work in the form of his collection of water-colour sketches of the wounded whom he attended. These drawings were still worthy of study as examples of the injuries sustained by our soldiers a century ago.

Florence Nightingale was for a time connected with the Middlesex Hospital, although it could not be claimed that it had had a large share in her training, for the conditions of training of nurses in those days, between 1840 and 1850, were not such as to satisfy even modest demands. Now, when our nursing service stands unchallenged as the most efficient, it was chastening to remember that Florence Nightingale to equip herself for her life's work thought fit to resort to the Protestant Deaconesses at Kaiserswerth in Germany, and to the hospitals under the nuns of St. Vincent de Paul in Paris. It should be remembered that in 1854 Florence Nightingale volunteered to give help with the cholera patients in the Middlesex Hospital, and it might not be too much to say that before going to the East she gained most of her practical experience in the stern work of emergent nursing in the wards of the Middlesex Hospital.

Two surgeons to the hospital when the speaker joined it —Mr. Hulke and Mr. Lawson—had both had experience of military surgery in the Crimea. Mr. Hulke would rarely allude to his military experiences, which had been great in the hospitals of Smyrna and before Sebastopol. Now and again when speaking of the blessings of Listerism, which he was one of the first whole-heartedly to adopt, he would drop a remark on the prevalence of gangrene and pyaemia in the Crimean hospitals, and one grim story he would occasionally tell of the number of dead who on account of these pestilences were put overboard from the crowded hospital transports on the voyage home. Some interesting letters written by Mr. Hulke from the seat of war to his relatives revealed the same strong, purposeful man as his students knew later, animated by the same high ideals, the same strict devotion to duty, and the same absorption in the work in hand. Mr. Lawson shared in the hardships and glories of Alma, Inkerman, and Balaclava. Later in the campaign he experienced a most severe attack of typhus, and lay for some time between life and death, being eventually sent home in a paralysed condition. He, too, seldom mentioned his military experiences, and "it was only," Surgeon-General Russell added, "when I had made my decision to join the Army Medical Service that he congratulated me." Since the Crimea the Middlesex Hospital had had its representatives in most of the wars that had taken place.

Mr. Andrew Clark, who was for so long connected with the hospital as surgeon and dean of the school, had held for thirty odd years a commission as medical officer in the auxiliary forces, so that when the Territorial medical service was created he had fitted himself to take a high administrative post therein. At present Mr. Alfred Webb Johnston, now a major R.A.M.C. and D.S.O., was worthily representing the hospital in a base hospital in France. When the O.T.C. was founded Major Johnston helped by his inspiring efforts to make the Middlesex contingent a model of what such contingents should be. It could be said authoritatively that the medical officers who joined the army after going through the preliminary training of the O.T.C. were of greatly enhanced military worth. The rudiments of their new profession were already theirs, and they were able at once to undertake technical duties without loss of time, and with insight and intelligence which would have been lacking had they not availed themselves of the preliminary grounding given them in the school corps. Surgeon-General Russell also referred to Major Dauber, who had been surgeon to the Sussex Yeomanry, and early in the war was appointed to the East Anglian clearing hospital. It was quickly chosen for active service and dispatched to the Mediterranean. As the unit was proceeding to Gallipoli the ship was torpedoed, and Dauber perished with others of his unit on the threshold of what promised to be military work of high value. Among old students who had given military service reference was made to Dr. Leslie, who entered the Egyptian service, and accompanied Baker Pasha on his ill-fated expedition, and met his death at the hands of the dervishes. Middlesex Hospital men were to be met in the Navy, the Army, and the Indian Medical Service, but their numbers were too few; in a school of such importance there should be some official whose business it was to study the students, learn their potentialities, and give them the information they required to aid them in choosing their career. The resources and conditions of the public services should be as an open book to the students as well as the openings in civil life; only in this way would the Navy, the Army, the Colonial services, and the great public health services get their due.

The staff and old students of the hospital had responded well to the call of the country for medical officers in the present struggle. In every grade of the military hierarchy they were doing their share. From trench to base there was no sphere in the wide-flung line of operations—at home, France, Salonika, Mesopotamia, and Africa—where they were not taking their full share of the burden. In conclusion Surgeon-General Russell said:

"I will only ask you to note how, under the great pressure of the nation's peril, the component parts of the profession have been welded into one homogeneous whole. We have become a nation in arms, and as each new demand has been made, the profession has responded; much has been asked and given, but more will be wanted. The cadres of a great national corps must be kept filled. Civil and military elements have been pressed into one great unit, with one aim and with one object. Ways and means must be found to perpetuate this union. This is one of the problems to be solved after the war, and I do not think I am too sanguine in thinking that our recent experiences have eased the difficulties and pointed out the road. Meanwhile we may, without boastfulness, take comfort in the thought that great work has been and is being done, that the fires of common effort and common sacrifice now burning so brightly in the nation at large, are burning not less brightly in the profession and in this school, and that the corps to which I and so many of you belong—I speak of it in its wider sense, embracing all who are doing military medical work for the Crown—has justified the motto which is its inspiration and its guide, '*In arduis fidelis.*'"

As the result of a series of experiments with *Bacillus bovisepticus* or snuffles bacillus, which belongs to the haemorrhagic septicaemia group and is pathogenic to the rabbit, Miller and Noble arrived at the conclusion (*Journal of Experimental Medicine*, vol. xxiv, No. 3) that infection is favoured by chilling after the animals have been accustomed to heat. The disease occurs frequently in rabbits under natural conditions, so that the authors consider the application of the experimental results to similar respiratory conditions in man less open to objection than similar experiments with other infections. They have, however, obtained some evidence that any marked change of temperature predisposes rabbits to this infection, the severity of which varies with the amount of change, and that a change from low to high temperature has an even more marked effect than that from high to low.

British Medical Journal.

SATURDAY, OCTOBER 7th, 1916.

THE DISCHARGEABLE DISABLED SOLDIER.

The Naval and Military War Pensions Act provided that the War Pensions Statutory Committee it set up should "make provision for the care of disabled officers and men after they have left the service, including provision for their health, training, and employment." The Act received the Royal Assent on November 10th, 1915. The constitution of the committee was announced by the Prime Minister in the House of Commons on January 4th, 1916. It held its first meeting under the presidency of its chairman, the Prince of Wales, on January 17th, and a second full meeting on February 1st. At this second meeting the Prince said that the problem of the men disabled, whether from wounds or disease, was difficult, but it was the duty of the nation to see that they were provided not alone with pensions, but with employment suited to their new conditions, and, if necessary, trained. At the beginning of March the Parliamentary Secretary to the Local Government Board announced to the House of Commons the constitution of the Disablement Subcommittee which the Act required the Statutory Committee to appoint for the purpose of making provision for the care of disabled officers and men. Since then there has been no public announcement as to the activities of the Committee in this direction, if we except a circular issued at the end of July dealing generally with the matter, from which it appeared that the number of disabled sailors and soldiers at the end of May was estimated at over 30,000; since then the number must have been largely increased.

So far as the public has been made aware, however, the Statutory Pensions Committee would not appear as yet to have devoted to this aspect of its functions the attention which is desirable. It may be that the reasons for the silence are sufficiently cogent; possibly the pensions side of the work has absorbed the greater part of the interest and time of the Committee, but the fact remains that there is still much leeway to make up. A great deal of information with regard to the best method of treating and training the disabled has been accumulated and many minds have been turned to the problem, so that it should now be possible to formulate the general principles by which the Statutory Pensions Committee ought to be guided in this part of its statutory duties. One point which has been regarded as fundamental is still undetermined: it is the question whether the disabled soldier who cannot again be made fit for military service should be retained under military control while there is reasonable prospect of his being returned ultimately to civil life as a useful member of the community, or whether he should be discharged from the army, leaving it to civilian effort to do what it can for him. We hope to show that this difficulty need be no bar to the immediate preparation of a scheme, and that it makes little difference to the principle of that scheme whether the answer to the question be in the affirmative or in the negative.

The first step, in our judgement, is that the Statutory Pensions Committee, of which Mr. Cyril Jackson is vice-chairman and chief executive officer, should shoulder the responsibility which has been placed upon it by Parliament, and should seek the assistance of other bodies only in the directions and to the extent in which those bodies are definitely concerned. Machinery for dealing with the matter must in any event be brought into existence. We suggest that it will be necessary to place the whole organization for the health, training, and employment of the disabled soldier in the hands of some person of approved administrative capacity. If it be decided that the disabled soldier whose condition is of such a nature that he may be improved by medical treatment and by training shall remain under military control, the administrator should be the head of a new subdepartment of the Army Medical Department, but should keep in touch with the Statutory Pensions Committee by attending its meetings. If the military authorities do not see their way to retain the men under control, then the administrator should be responsible to the Statutory Pensions Committee. In the one case his superior will be the Director-General of the Army Medical Service, and in the other the vice-chairman of the Statutory Pensions Committee. With the administrator there should be associated not only men versed in business and in philanthropic endeavour, but also a substantial proportion of medical men, chosen for their interest in the subject, and their knowledge of the means for promoting the health and training of disabled soldiers. In any event the Committee should contain officers of the Army Medical Service to represent that side of the problem; should military control be instituted they might constitute a majority.

The procedure which should be followed in the case of a sick or wounded soldier may now be traced. We will leave out of consideration men whose disability is of so slight and temporary a nature that they may reasonably be expected to be returned to the army within a period of, say, six months. The man with whom we are concerned is he whose disability is more serious. After a period of treatment and convalescence, he is examined by a military medical board. If this board decides that it is unlikely or impossible that he can again become fit, the man enters the category of dischargeable disabled soldiers, and the decision of the board should be at once notified not only to the military authorities and the Chelsea Commissioners, but also to the Statutory Pensions Committee. Whether the man remains in the army or not, and whether he is retained under military discipline or not, he becomes from that moment a subject of interest to the Statutory Pensions Committee, which should open a record for him, containing particulars as to his name and home address, the nature of his disability, the military unit in which he then is, and the destination to which it is proposed he should be sent. If it is arranged that the man remains under military control the Statutory War Pensions Committee would merely file the record for the time being; but if the opposite view prevails and the man is discharged, his case must be taken up by the Chelsea Commissioners, which must fix his "State pension." At the same time, the Statutory Pensions Committee should send notice of the man's discharge to the local pension committee, which should then take steps to assist him to return to his pre-war occupation or obtain some other. If the man is helpless, and if his private means do not permit of his living in comfort, the

duty is imposed on the Statutory and local Pensions Committees of seeing that he is admitted to a suitable home for incurables or provided with a supplementary pension, which will enable him to obtain suitable nursing and attendance at home. If his disabilities are such as to prevent him from returning to his old or any other work, but his physical condition is such as to afford hope of improvement, he should be sent to one of the special military hospitals or camps suitable for the treatment of his particular disability.

The stages involved in dealing with a disabled soldier may be summarized as: (1) Surgical and medical treatment; (2) training and re-education; (3) reintroduction to civil life. In the case of a man who can be returned to the army, a large part of the necessary process is involved in (1), but physical training and manual re-education materially assist recovery. Consequently command dépôts, camps, and special hospitals have been established wherein stage (2) is carried on. That the military authorities have not entirely repudiated responsibility for returning men to civil life with some measure of repair is shown by the fact that the provision of artificial limbs is undertaken, and that men who can never be fit for active service are already given treatment in the special military hospitals, and in some instances training and education in convalescent camps and in command dépôts. What is wanted is the systematic inclusion of training and education in the work of these military institutions, and the extension of their functions so that they may clearly include the dischargeable disabled soldier. The establishment of new centres for the treatment and education of men who have again become civilians would be wasteful. Equipment would have to be duplicated, though after the war that now used at the military hospitals will no longer be needed, and it would be necessary also to attempt to duplicate personnel for medical treatment, for the administration of massage and electricity, and for instruction in gymnastics. It is very doubtful whether it could be found.

In extending facilities which already exist it will probably be recognized that while physical training is of more importance in the case of men who will again be rendered fit for the army, greater attention will have to be paid to re-education in that of men who must return to civil life. In the event of the military authorities declining to retain them under their control the Statutory Pensions Committee should at once approach the War Office with a view to arranging a scheme for the extension of training and re-education to the men for whom the Committee is responsible. It is earnestly to be hoped, however, that the military authorities will take a broader view, and will entrust the extension and organization of centres for treatment, training, and re-education to an administrative head of a new subdepartment of the Army Medical Department.

The dischargeable disabled soldier, if transferred by the direction of a medical board, or of a board of experts, to one of the military centres suitable for his disability, would there obtain medical and surgical treatment at the hands of experts; massage, electricity, physical exercises, and training for usefulness in after-life would be available to him, and periodic medical boards would decide at what point the man was fit to be discharged from the centre. If the man were retained under military control, his discharge from the centre would coincide with his discharge from the army. When the board decided on his discharge, the Chelsea Commissioners and the Statutory Committee would be notified; the man would then return to civil life and would have a claim to such advantages as are obtainable from existing civilian agencies. The State pension to which he is entitled would be fixed by the Chelsea Commissioners. The Chancellor of the Exchequer stated shortly before Parliament adjourned that the principle by which the Chelsea Commissioners were to be guided was that the State should pay a flat rate of pension without regard to a person's income or social status, and that the flat rate should be supplemented by pensions provided partly out of the six millions voted to the Statutory War Pensions Committee and partly by contributions from voluntary sources, such as the Navy League and the Kitchener Memorial Fund. A discharged man, therefore, who regards himself as still unfit for work will be entitled to apply to the Statutory Pensions Committee, through the local pensions committee, for a supplementary pension. Decision will often be found very difficult, and the committees will need expert medical advice. It is to be hoped that all the authorities concerned will bear in mind that the main object is to get the discharged disabled man back to some suitable occupation, and that the pension is to be regarded as a separate gift to discharge the debt the country owes him, and not as a means whereby he may live in idleness for the rest of his days.

But the duties of the Statutory Pensions Committee towards the discharged man extend much beyond the grant of a supplementary pension. On receiving a notification from the military authorities that a man has been discharged the Committee should communicate the fact to the local pensions committee of the area to which the man is going, and it will be the duty of this committee to help the man to find suitable employment. For this purpose the local committee must be in close touch with other bodies, and especially with the Labour Exchange and the local Insurance Committee. Through these two bodies the man can receive assistance in obtaining employment, and ordinary medical attendance, but in no case should the Statutory Pensions Committee and its local committees cease to regard themselves as primarily responsible for the care of the discharged disabled soldier.

We are quite aware that any scheme which can be suggested for dealing with so difficult a problem must present administrative difficulties, but we believe that such difficulties can be overcome. In a question of such national importance it must be the desire of all to work out a scheme by which the best possible result shall be obtained, and all departments, bodies, or individuals likely to be brought into relation with the treatment and training of the disabled should be willing to take their proper place in the mosaic. The main object is to establish such a system of dealing with disabled men as will ensure that succeeding generations shall not curse us for failing to deal wisely and fairly with a problem which must affect our children only less than ourselves.

THE NEW MEDICAL INSURANCE REGULATIONS.

It is becoming more and more evident that in many parts of the country at least one of the proposed new medical regulations—that is, Article 3—will not receive anything like willing acquiescence from panel practitioners. Nominally this regulation—which will be found in the Supplement for last week, p. 94—is being made in order to link up the panel service with the new arrangements for the

treatment of venereal diseases and the treatment of disabled soldiers and sailors, but practically it will apply to any expert services whatever that may at any time hereafter become available. It will have been seen from the letter by the Medical Secretary of the British Medical Association published last week (SUPPLEMENT, p. 93) that the Commissioners at first intended to specify definitely the obligations of panel practitioners in relation to consultants and specialists, but that the Insurance Acts Committee persuaded them to make the terms of the regulation more general. They have done so by binding practitioners to take such steps "as may reasonably be necessary in order that the patient may derive full advantage from the provision of such services." It may be doubted whether the Commissioners have not in this way under the guise of a concession taken away with one hand far more than they have given with the other. For the question at once arises, Who is to decide what steps are reasonably necessary? To this there can be but one reply—that in the event of a dispute the Commissioners will be the ultimate judges unless the case is taken to a court of law. We already know from their first proposals that they consider it reasonable (1) that the panel practitioners should give to the expert all necessary information as to the patient's previous history and the practitioner's diagnosis and treatment; (2) should furnish specimens for laboratory examination; and (3) should attend with the patient for consultation with the expert when the nature of the case so requires. Though the Commissioners have agreed not to insert these terms in the regulation, there is no ground for believing that they have in any way narrowed their ideas as to what is reasonably necessary, or that they will hesitate to enforce them, while the vague terms of the regulation will give them power almost indefinitely to extend even their first ideas. Judging both by past experience and by the present "concession," the panel practitioners may well say: Quidquid id est, timeo Danaos et dona ferentes.

In other respects, too, the new regulation is so framed that it must inevitably give origin to doubtful questions. At present disputes often arise as to whether certain services come within the province of panel practitioners, and patients in order to save their pockets demand services which their panel doctor holds to be not such as can "be properly undertaken by a general practitioner of ordinary professional competence and skill." But under the new regulation, while the present difficulty will still remain, there is nothing to prevent patients habitually demanding specialist treatment as it will cost them nothing. They may thus put their panel doctor to a great amount of extra trouble, such as writing out a full description of the case and going perhaps in many cases long distances to meet a consultant; there is no indication that for this extra labour there is to be any extra remuneration. The provision that a public body must in organizing such special services have consulted the Local Medical Committee will in many areas be practically inoperative, as the public body is in no way bound to act upon any representations from the Local Medical Committee. On the other hand, the proviso to the regulation not only directs a Panel Committee, when it prepares a scheme to define the duties of practitioners, to consult the Insurance Committee, but it will be bound to take effective notice of the representations of the Insurance Committee as the scheme requires the approval of the Commissioners, and it may be taken for granted that such approval will not be given unless the Panel Committee specifies all the obligations which the Commissioners have now or may in the future have in their minds. In short the regulation is so worded as to give the Commissioners power to pile up duties on panel practitioners—such as, for example, filling up periodical reports on all special cases like those required for tuberculous cases—and all this can be enforced on the simple plea that it is necessary to enable patients to obtain the full advantage of any special services that now exist or that may be established in the future.

There is good ground for believing that in the not distan tfuture there will be a great extension of special services for the insured. Not only may sanatorium benefit be extended to dependants of the insured, but it is to be remembered that already under Section 8 (1) (*b*) of the Act of 1911, in addition to tuberculosis, "any other disease which the Local Government Board with the approval of the Treasury may appoint," may be included under sanatorium benefit. It is probable also that an attempt will be made to link up with the insurance scheme the great general hospitals and the special hospitals for diseases of the eye, ear, nose, and throat, while a step has already been taken in the direction of providing special treatment for maternity cases. All this may be right and proper, for probably no one will deny that one of the anomalies of the insurance scheme is that it stops short with providing the services of general practitioners, and has until recently left the insured to charity or to their own resources when they required any specialist treatment, except in the case of tuberculosis.

But the question will arise, Who is to pay for all the special services that ought to be, and probably will be, provided for the insured? In the case of the special provision for venereal diseases the question has already been settled, as the county and county borough rates will be responsible for the cost, with a liberal grant from the Treasury; and something similar applies in the case of specialist maternity treatment. But will that be the case all round? There will always be the temptation to encroach on the medical benefit fund, and to alienate for special services at least part, if not all, the present Treasury grant to medical benefit. But both the Government and the Commissioners must have become aware that nothing will so certainly and so closely unite the profession as an attempt to reduce the present remuneration of panel practitioners. The whole insurance scheme would at once be put in danger of collapse, as it cannot exist without the co-operation of the medical profession. But apparently the authorities consider that they can find another way. Instead of at one fell swoop reducing the medical fees, which would lead to instant and serious revolt either now or after the war, a plan far more likely to succeed would be, gradually and by slight increments at a time, to extend the obligations of panel practitioners without touching the present remuneration. The new regulation is distinctly a move in this direction; for the present it may involve nothing but what any practitioner would gladly do for his patients whose interests he has at heart. But the regulation contains far greater potentialities, and in the hands of authorities that have shown little sympathy with the profession, it makes legal the imposition of fresh duties and obligations which would be even more disadvantageous than a reduction of medical fees, as any neglect of those duties once imposed would put the panel practitioner in a most invidious position in the eyes of the public. The Insurance Acts Committee has given only a

provisional assent to the new regulation pending the conference of Local Medical and Panel Committees on October 19th, but the Committee has distinctly stated that it would prefer that there should be no new regulation at all on the subject.

If fresh duties are imposed beyond those any average practitioner would gladly discharge towards his patients without any new regulation, all such fresh obligations should be paid for. The fact that the British Medical Association has expressed a wish that the discussion of fees should be postponed until after the end of the war is quite beside the question. In common justice it must be admitted that the wish could have been expressed only on the understanding that the conditions of service remained as at present, and to argue that because such a wish was expressed the Commissioners are therefore at liberty to impose any number of extra duties now and to postpone the question of payment for them to an indefinite future is an insult to common sense. Even with their present duties the present methods of payment of panel practitioners have become a reproach to the Insurance administration. In this connexion we would draw attention to the letter which appeared in the Supplement of September 23rd from the Honorary Secretary of the Bath Panel Committee on the financial administration of the Insurance Act. Relying on a letter which is there quoted from the Insurance Commissioners, the secretary argues that "if a person is disabled and lives for twenty years the medical benefit fund is not credited with a single penny in respect of his treatment, and, being disabled, he probably needs a good deal of attendance," and adds that, as far as is known, "no financial arrangement for crediting the medical benefit pool for the treatment of soldiers discharged through disablement has been made." The question is at present under discussion between the Government departments concerned, but there appears to be a disposition in some quarters to throw the whole onus for treatment on the insurance scheme, and it is difficult to see how, apart from a special Government grant, that can be done without putting a serious amount of extra work on the panel practitioners, and nothing is said of any addition to the general medical benefit pool. The extra unpaid work will consist not only of ordinary medical treatment of the disabled, but, under the proposed new regulation, will include all the obligations towards any specialist services which the Commissioners may consider "reasonably necessary."

PENETRATING WOUNDS OF THE LUNG AND PLEURA.

Penetrating wounds of the lung and pleura are of frequent occurrence in the present war, but fortunately they are proving to have an unexpectedly low mortality. Time was when over 90 per cent. of these patients died, as was the case with the French army in the Crimean war. In the Spanish-American war bullets were smaller and had a higher velocity than in the Fifties, and the mortality was only a little over 25 per cent. In the Boer war it had fallen to 14 per cent., and it is said to have been less than 4 per cent. among the Japanese in the battle of Mukden. Dr. Hale White stated some time ago in a clinical lecture[1] that none of the many cases he had seen in hospital since the outbreak of the war had proved fatal. This, no doubt, would be because the cases reaching England would be those that had survived the immediate dangers of these wounds, and were less likely to succumb to their more remote risks. It is, indeed, stated in the official *Memorandum* on the Treatment of Injuries in War, issued by Sir Arthur Sloggett, D.G., in 1915 to the medical officers in France, that "it is most important that no move should be permitted for several days, but at the end of a week the patient should be sent to the base . . . men with wounds of the lung should not be sent across the sea earlier than a fortnight after the injury. Three weeks is a safer time limit to guard against the risk of a fresh haemorrhage or pneumothorax."

An interesting paper on the subject has recently been written by Dr. R. D. Rudolf,[2] who finds that these wounds are most often caused by rifle or shrapnel bullets, or by pieces of shrapnel or shell. Very few are due to bayonet wounds, and no example of sword wound of the chest has yet come under his notice. A striking feature of many of these cases has been the small amount of injury caused by the passage of the shot or fragment through the chest. Wounds that ought theoretically to be fatal here are often practically harmless. The patient may complain of nothing more than a little discomfort or slight haemoptysis, as in an instance quoted in which a rifle bullet entered the second right intercostal space near the sternum and came out just below the angle of the left scapula. Contrariwise, what appears, anatomically speaking, to be a safe wound, may quickly end in death. The wounds most to be dreaded are those caused by pieces of shrapnel or shell. These do more destruction in the tissues, and often carry pieces of clothing in with them to infect the wound.

Laceration of the lung may produce pneumothorax, haemothorax, or, less commonly, a combination of the two. Pneumothorax may also be produced by the entry of air from outside, when infection and empyema are much more likely to occur. Dr. Rudolf notes that the bell sound, one of the more important physical signs of pneumothorax, according to the books, is often absent in these cases. The reason for its absence is obscure; for the sign may be present when the tension of the gas in the pleural cavity is greater than, equal to, or less than the tension of the circumambient air. As regards haemothorax, he finds that the blood most often comes from the lung, less frequently from a torn vessel in the chest wall. All the patients, he says, have fever at first, and this may last for many days in cases in which the blood does not become infected. The greatest danger for these patients, indeed, is that of infection; but the effused blood remains sterile in about three-quarters of the cases. Operation and free drainage are usually, but not invariably, required when the haemothorax becomes infected, but aspiration alone may bring about a cure. If a sterile haemothorax is small it may be left alone; if, however, it is large enough to displace the heart it should be removed by aspiration, the fluid being replaced by gas in order to avoid the dangers of a sudden re-expansion of the collapsed lung. Two needles should be used, one to withdraw the blood, the other to admit the gas that is to take its place temporarily. Some clotting is believed to take place in all cases, and in a few instances massive clotting of the haemothorax occurs. In the majority of cases of haemothorax, however, a part—it may be a large part—of the fluid can be removed by aspiration, and Dr. Rudolf advises the use of a good-sized cannula. He adds that it is not uncommon to find pneumonia develop on the opposite side of the chest in patients with traumatic haemothorax.

[1] *Lancet*, December 4th, 1915.

[2] *Quart. Journ. of Medicine*, Oxford, 1916, ix, 257.

Stress is laid on the importance of the collaboration between physician, surgeon, and skiagrapher in all instances of penetrating wounds of the lung and pleura. The services of the skiagrapher are, of course, invaluable to the surgeon who has to remove a foreign body from the pleural cavity or lung. They are also invaluable to the physician, who may have great difficulty in the diagnosis between combinations of such various conditions as massive collapse of the lung, the presence of fluid in the pleural cavity, pneumothorax, pneumonic consolidation, and traumatisms of the lung tissue.

THE DISABLED SOLDIER IN FRANCE.

Elsewhere in this issue (p. 492) is published an article giving an account of the arrangements now in force in France with regard to the treatment of soldiers who have become more or less incapacitated. Attempts to remove the after-effects of injuries by physiotherapeutic methods have commonly played some part in the work of French subsidiary medical institutions and dépôts for convalescents, "éclopés," and "inaptes," and to this extent the French military authorities may be regarded as having previously paid some attention to the problem. Nevertheless they were for long disposed to abandon any attempt to treat the more marked and obstinate kinds of physical disability at a comparatively early date. Now, however, as will be seen, it is an outstanding point in the military medical system of France that no disabled soldier shall be allowed to leave the army as medically unfit until every effort that modern science can suggest has been made either to remove his disability or reduce it as much as possible. Clinics such as that at the Grand Palais, Paris, which was described in this Journal early this year, are now playing a very important part in the French army system, and are doing a great deal towards reducing the magnitude of the problem of disability, as are the military orthopaedic and other special hospitals in this country. The system now approved in France and in operation in many districts, if not in all, is in principle very similar to the plan we have advocated for this country. This is the more interesting because the question has been approached and the conclusion reached by different routes. The aim of the French authorities is military and financial; they desire on the one hand to diminish the preventable wastage in the army caused by the discharge of men who might possibly be rendered fit once more to take their place in the ranks, and, on the other, to lessen the drain on the financial resources of the State which results from the fact that all soldiers discharged from the French army because of incapacity brought about by the performance of duty become *ipso facto* entitled to compensation so long as the incapacity exists, and in proportion to its extent. The considerations which have had most weight in the proposals made for this country have had regard not only to the need of returning men to the army, but also to the effect on national economics and the work of the medical profession of returning a large number of men to civil life before the maximum improvement in their condition has been produced and before they are fit to engage in any remunerative occupation. There are plenty of cases in which a man, after some injury, experiences a certain difficulty in using some particular set of muscles and is then tempted to abandon any attempt to use them. In such cases the disability, which at first may be almost purely functional, ends by becoming structural and permanent. This fact is well recognized among neurologists, and in physiotherapeutic institutions there are generally to be seen patients who are being taught to exercise once more their will over certain muscles. It must be admitted that the circumstances surrounding the problem, and to some extent constituting it, are not altogether identical in the two countries. There are, for instance, differences of thought between Great Britain and France in regard to the treatment that should be accorded by the State and local authorities to persons who either cannot or will not provide for their own needs; moreover, as will be seen on turning to the article which has been mentioned, the expenditure involved by the continued mobilization of a soldier—in the way of pay and allowances—is very much less in France than it is in this country. Nevertheless the balance of argument is in favour of the view that the system which will work best in this country must be founded on principles not differing materially from those so successfully applied by the French Ministry of War.

CLEAN WIGWAMS FOR CIVILIZED MEN.

In his presidential address delivered at the annual meeting of the Sanitary Inspectors' Association on September 28th Sir James Crichton-Browne, speaking of social and domestic reform after the war, dwelt on the vital importance of housing reform. We cannot, he said, send the brave men who have fought for us abroad back into hovels and dug-outs and funk holes at home, such as are still in many places, both in town and country, the only available shelter for the poor. We must not any longer leave multitudes of our people huddled together in dwellings that are incubators of disease and debasers of morality. We must recognize the right of every civilized man to a clean wigwam, and of every civilized family to a decent lodging, whether they can afford to pay for it or not. The true causes of slumdom are cheap and nasty buildings, overcrowding, and abject poverty. The two effectual remedies, Sir James Crichton-Browne declared, are a living wage and extensive building operations under the direction and, if need be, with the assistance of the State. Congested areas in towns must be demolished, and 300,000 good habitable cottages are wanted in the country immediately. With this pronouncement may be compared that of Surgeon-General Gorgas in an address to the Conference of Health Officers held at Rochester, New York, which was quoted in our issue of April 29th, 1916 (p. 627). The chief of the medical service of the United States army then said that the extraordinary improvement in the health conditions of Panama was due to the social betterment produced by high wages. He added that if such wages were now paid in New York, "all the poverty, sickness, and degradation caused at present by low wages would be rapidly ameliorated." But high wages alone will not settle what Carlyle called the "condition of the people question." The worker must be taught how to use his larger earnings in a rational way rather than to his own further degradation and to the enrichment of the publican. In too many cases the high wages now paid in arsenals and munition factories have not led to social betterment in the working classes. The medical profession has preached the gospel of health, in season and out of season, but great as has been the progress in many directions, among the poor the seed of sanitary knowledge still in large measure falls among thorns. This is not because our poorer brethren are in any way more wicked than their better-to-do fellow men, but because the unwholesome and depressing surroundings amid which they have to live drive the father, and too often the mother, to the public-house for passing relief from the squalor of their home. Until they are better housed they will continue to drink. It is useless for the moralist to denounce this as sinful, and we are glad to note that some of the more enlightened among the clergy recognize that the responsibility lies with landlords whose greed forces working men to live in filthy and unhealthy hovels. In the crusade against this evil we gladly welcome the help of such ministers of religion as the Rev.

H. J. Sharpe, rector of Marston Morteyne, in Bedfordshire. In a pastoral letter to his parishioners, dated August 24th, Mr. Sharpe, after giving figures showing the appalling amount of the national expenditure in drink, invokes the testimony of medical men to the fact that workers in town and in country alike are often housed as no rich man would house his cattle, in small airless insanitary huts where large families are being brought up by struggling mothers. "What wonder," he asks, "if some of the children fall away under the drink crave? What wonder if others fall into darker crimes for which their poor mothers blush?" Doctors can exhort people to better ways of material living, but their efforts would be greatly helped if clergymen of all denominations would, like Mr. Sharpe, use their spiritual influence to promote thrift and sobriety among their flocks. It is altogether right that poor people should have the means of getting clean wigwams, but they must learn to keep them clean and to bring up their families in decent conditions; otherwise a vicious circle of abject poverty and reckless wastefulness will be established that will make real improvement hopeless.

A BELGIAN PRISONER IN A GERMAN CAMP.

FURTHER testimony to the brutality with which the Germans treat their prisoners comes to us from a Belgian source. The story of a two years' captivity in Germany is told by Alphonse Sibenaler, a quartermaster-sergeant in the Belgian army, in *Le Journal* of September 23rd and 24th. He was wounded and taken prisoner in the defence of Namur on August 23rd, 1914. He was sent to Münster-Lager in Hanover, where crowds of men were huddled together in roughly-made huts and tents, twelve hundred being packed in a barn. Even for the wounded there was nothing but straw to sleep on. Nothing, says Sibenaler, can give an idea of the brutality of the discipline at the beginning. The prisoners were awakened by blows with the butt end of rifles, and the guards struck and even killed their unfortunate charges on the most flimsy pretext. The lightest punishment was deprivation of bread. The medical service was disgraceful, although continual inoculations were carried out. When there were more than three patients there was no pretence of examination. After a time, British prisoners began to arrive. Sibenaler bears witness to the special barbarity with which they were treated. In December, 1914, he was sent to Scheuen, near Celle, where the conditions were atrocious. He fell sick, and in April, 1915, was returned to Münster-Lager, where he found that the state of things had somewhat improved. Corporal punishments had ceased, but the food, which had never been abundant, after a time became altogether insufficient. In 1915 the soup was eatable; in 1916 the daily ration was 300 grams of black bread made of a hash of potatoes and sawdust, which very quickly became mouldy; in this state it was generally served out to the prisoners. At midday they had soup made of dried fish with beetroot and flakes of maize; from time to time they got a little bad meat. In the evening they had preserved fruit, which was generally bad. The rations, in short, were quite unfit for human food, and the commandant of the camp used them to fatten his pigs, ducks, geese, and rabbits. The prisoners lived almost entirely on supplies sent from outside, but many whose families were in territory occupied by the Germans received nothing. Yet they were compelled to do hard manual labour, and this, combined with the want of food, caused many deaths. At Verdun, where he was for a very short time in the early part of 1916, Sibenaler found that the tone of the guards had greatly changed; they spoke with emotion of the civil population of Belgium and Northern France, for whom they professed a warm regard! On the other hand, they displayed a frantic hatred of England, declaring that unless she had come in victory would have been theirs. In August, 1916, Sibenaler managed to escape, after two unsuccessful attempts for which he was severely punished. It is edifying to read of the newborn pity for the victims of his cruelty felt by the Teuton under the stress of growing fear of the future. Fear with him takes the place of that true culture which *emollit mores nec sinit esse feros*. Any improvement in his conduct to helpless people who fall a prey to his savagery is to be welcomed, whatever its source. Nevertheless, we are inclined to take the hatred which he reserves for us as a compliment.

THE WORK OF THE EXPANDED R.A.M.C.

IN this issue are published two tributes to the way in which the civil profession has responded to the demands made upon it to supply medical officers for the greatly enlarged corps required to meet the needs of the great armies the people of the British Empire have put into the field. The response has come from all ranks and ages of the profession, and from every part of the empire. Not only has the response been large numerically, but the work done by those who have joined has earned the highest praise from experts. The one tribute was paid by Surgeon-General Russell, deputy director-general at the War Office at home, in the address he gave at the opening of the winter session at the Middlesex Hospital, and the other by a senior medical officer holding a most responsible position with the British armies in France. These officers have seen different aspects of the matter, but their conclusion is the same. The officer who has watched their work in France expresses admiration of the way in which medical officers who have joined the army from civil life, previously unaccustomed to military duties, have quickly grasped the situation, and in a few months have become veterans. He describes their work as splendid, and expresses the hope, in which we would venture strongly to concur, that when the medical history of the war comes to be written the work of the civilian practitioners who have joined the Royal Army Medical Corps will be placed in its true perspective. Surgeon-General Russell, in the concluding words of his address at the Middlesex Hospital, noted how, as we have become a nation in arms, the medical profession has responded to each new demand upon it, and has embarked on its duties in a spirit which has ensured that the civil and military elements have been pressed into one great unit, with one aim and with one object. He also expresses the hope, in which again we would warmly concur, that ways and means shall be found to perpetuate this union. It is, we think, true that the regular officers of the R.A.M.C. have in the not very distant past lived too much apart from the general body of the profession. This is no doubt due in no small measure to the fact that the majority of them for a good many years after they first join spend much of their time abroad, and that they thus tend to get out of touch with the civilian profession, to the disadvantage of both parties.

THE ECONOMIC ASPECT OF THE TUBERCULOSIS CAMPAIGN.

THE gradual accumulation of experience in dealing with tuberculosis is enabling municipal medical officers to form definite judgements as to the relative value of existing methods, and as to the actual return that is being obtained in response to the great outlay of time, energy, and money incurred. We have had occasion to refer to the reports of the tuberculosis officer for the county borough of Middlesbrough on a previous occasion (BRITISH MEDICAL JOURNAL, March, 1916), and his account[1] rendered to the health department of that borough for the year 1915 serves to emphasize and amplify many of the points to which we then drew attention. Dr. H. A. Ellis, with considerable experience in similar work in Australia, is able to point to steady and increasing success, owing no doubt to the wise

[1] County Borough of Middlesbrough, Health Department. Report of the Tuberculosis Medical Officer (Dr. H. A. Ellis) for the year 1915.

determination of the board by whose authority he works to devote primary attention to early cases. His methods and the smooth relations which he is able to maintain with the local members of the profession are described in detail. The passive hostility of a certain class of working people, and more especially the objection of mothers, is being overcome, and the number of attendances, particularly to the evening clinics, is steadily increasing. The importance of early recognition among school children is insisted upon, and frequent inspection and periodic record of weight in all cases is strongly urged. It is highly significant that the deaths among children all occur in cases that have been notified for less than six months. Among those whose disease has been recognized and treated for a longer period the mortality is almost *nil*. Not less important is it to note that the system of notification as a means of checking the risk of infection is more or less of a failure. The large proportion of deaths that have to be recorded within a few months of notification goes to prove that infective cases are being allowed to mix freely with the healthy until such time as they are compelled to call in medical assistance. The danger to children, always liable to be handled, nursed, and kissed by their unthinking relatives, is manifest. The number of young children who are infected either by this means or by way of tuberculous milk is very considerable, and the more closely the danger is examined the more evident it becomes. Recent figures show a much higher percentage than many of the estimates made in former years. In the treatment of the young, the economic importance of a steady supply of good milk is strongly insisted on, and the allocation of funds for the purpose by public bodies is recommended. The enforcement of a period of rest, lying down for a definite time daily, is found to be even more efficacious in the case of children than in adults. Dr. Ellis has endeavoured to form an estimate of the actual liability of the population in any given urban area to tuberculosis, and comes to the conclusion that 60 per cent. are infected at some period of their lives, and that 20 per cent. suffer at some time from active tuberculosis, but that only about 9 per cent. die of the disease. Looking to the financial side of the question, he contends that much money and effort are wasted owing to a want of system in expenditure, and urges that the diffusion of available funds over the various means of treatment is impairing the efficiency of the whole. The first essential, he holds, is early diagnosis, and money is best spent on early cases, and the dispensary therefore comes first; until it has been efficiently equipped no other expenditure should be undertaken. Home treatment, if carefully conducted, will often render the sanatorium unnecessary, but if it is required it should, he thinks, be in the form of rest and fresh air for a period not exceeding three months. The general sanatorium for the cases that have not been taken at the early stage, and, finally, the hospital for the advanced case, can only be employed after the financial resources of the primary treatment have been secured.

THE Bordeaux School for the Industrial Training of Crippled Soldiers, of which some account was given in the BRITISH MEDICAL JOURNAL of June 10th (p. 825), is now installed in the buildings of what was formerly the Grand Séminaire, which are to be its permanent quarters. On September 8th an official visit was paid by representatives of the municipality, the general council of the Gironde department, and the Bordeaux Chamber of Commerce, the three local corporations which in conjunction with the State provide the funds. They inspected the prothetic service under the direction of Dr. Gourdon, and saw one-legged men walking easily without the help of a cane, one who had undergone amputation through both thighs walking with two sticks without crutches, and examples of very simple apparatus for the restoration of the use of the arm in cases of resection of the elbow and radial paralysis. There was also a specimen of an artificial hand worked by the transmission of the movements of the chest to the fingers.

THE WAR.

SOME IMPRESSIONS OF A CIVILIAN AT THE WESTERN FRONT.

(Concluded from p. 469.)

TOO MANY MEDICAL OFFICERS?

IT was not uncommon last winter to hear the statement that the Army Medical Service in France was overmanned, and it was sometimes asserted that members of staffs of certain base hospitals might have only a few hours' work a day. Such statements were heard less often during last spring and summer; the larger army holding a much longer line, and the more vigorous fighting have combined to make the work of medical units in certain areas much heavier, and whenever operations are active at any part of the front the bases are busy.

The practice seems to be to keep a newly joined medical officer at the base for a time, demands from the battalions, batteries, and advanced medical units to replace medical officers killed, wounded, or sick being met by sending up men who have been longest at the base. While at the base they gain a good deal of technical administrative information, and by working in the hospitals become acquainted with the conditions under which the wounded arrive there, and the facilities for treatment. By seeing and treating the men on admission they observe how dressings and splints are applied at the front, and sometimes, perhaps, take note of mistakes which they will avoid when their turn comes to be working at the other end. Most of the demands for replacements are for regiments and batteries, and experience proves that only young men are physically fitted for such posts. This would seem to be the chief reason why a large proportion of the medical officers at the base are, as I was given to understand, between 35 and 45.

The term "front" may be used, in its application to the medical service, to comprise all units from the casualty clearing stations forward. It includes, therefore, the field ambulances and motor convoys. The former are responsible for the wounded from the time they leave their battalions; that is to say, in operations habitual in this war, from the time they leave the trenches or artillery posts until they leave the head quarters of the field ambulance. Motor convoys bring them down from the field ambulances to the casualty clearing stations.

Casualty clearing stations are directed to be mobilized in the proportion of one to each division of a field army. Such a unit is described in the regulations as the pivot upon which the removal of sick and wounded turns, as it is the central point to which the collecting zone converges and from which the evacuating zone and distributing zone diverge, and is the unit for establishing a channel or flow of sick and wounded between divisional ambulances and the line of evacuation. It must pass the wounded rapidly down the lines of communication, so that it may not itself become clogged.

Some casualty clearing stations we found more than half empty, and their medical officers disposed to grumble that they had not enough to do and sometimes that other similar units were getting more than their fair share of cases. It was undoubtedly true that some of these units were at the moment much busier than others. This seemed to depend on a variety of circumstances, chiefly, I gathered, on the exact part of the front where operations were at the time most active, and the trend of the roads down from it. The half-empty casualty clearing station had been busy a little earlier, and would probably be as busy again when another part of the front grew active, or when the pressure on casualty clearing stations on another road made it advisable to divert the wounded from it.

The establishment of a field ambulance includes ten medical officers, and field ambulances are directed to be provided at the rate of three to each division. A division at full strength contains, I believe, in theory somewhere about 20,000 men. Some of those who believe that economies in the number of medical officers employed in France might be effected assert that the allowance of three field ambulances to a division is too liberal. This is an administrative question only to be settled by experts who have extensive experience of what may happen, especially

when things in the fighting line go wrong. All I will venture to say is that, watching the working of the system when the division engaged was advancing and doing well, it seemed that everything was going smoothly, quickly, and without haste, and that there was a considerable reserve of power to meet an emergency which might at any moment have arisen had the division, for example, been checked or repulsed with heavy loss. The fact is that you may strike an average for an army during a campaign, but you cannot strike an average for a division on any particular day; you must prepare for the worst.

In such a war as this with large stretches of the line held immovable for months there must be times, often long times, when a division does little. Its military value is that the enemy knows that it is there on guard. When the division is inactive, its field ambulances can have very little to do and the medical officers may find their idleness irksome, and may be disposed to think that their energies are being wasted, and that they would be more useful at home. But this conclusion does not rightly follow from the premisses. The question whether a division has too many field ambulances when it is actively engaged can only be answered by experts having experience of what has happened, and may, therefore, happen again.

Of the motor convoys critics assert that they need not have medical officers. But, apart from considerations connected with medical emergencies during transit, it is wise to recognize that they are medical units, and that it is a dangerous principle to approve any plan which places the command of medical units in the hand of another branch of the army. Here again it seems clear that the matter is one to be determined by expert opinion.

The work at the general and stationary hospitals at the bases in France is of the same character as in the military general hospitals at home, and involves no greater risk to life or health. There are the same intervals of comparative slackness; during last winter there seem to have been periods when the work to be done was mainly of a routine kind and quite light. When fighting at the front is active the curve of admissions in proportion to the number of beds rises more quickly and to a greater height than in a military hospital at home. The practice this summer seems to have been to admit to a hospital at the base all wounded and sick except the minority, who were sent to convalescent camps in the expectation that they would be fit to rejoin their regiments without going home. Speaking generally of hospitals at a base, it would seem that, owing to the fact that evacuation to England can be carried on day by day, the number of occupied beds tends to fall after a rush more rapidly than in the case of military general hospitals at home. This does not apply, at least in anything like the same degree, to hospitals or sections of hospitals set apart for the reception of serious cases; the steady stream of fresh cases, the number of operations to be performed, including the adjustment of severe fractures, to say nothing of after-treatment, make a continuous call on the energies of all, which so far as could be judged, had not been relaxed since the beginning of July. During all this period hospitals of this kind have been near the limit where distinct understaffing begins, and it is true to say that in many instances and for considerable periods the staffs have had to work longer and harder than it is quite wise to ask.

In the general hospitals or sections, which are not specialized, the medical and surgical staff is, so far as my inquiries went, very much below the regulation establishment, which, however, in existing circumstances, when the home base can be reached so quickly and easily, is apparently in excess of requirements. No attempt is, in fact, made to keep the medical personnel up to the sanctioned establishment, and a staff less than half as numerous, if not officially recognized, seems to be a standard tacitly accepted. It is not large enough for easy working during a push, but it is adequate in quiet times, and will probably be sufficient during the winter, if, as happened last year, active fighting diminishes and there is no serious epidemic.

Demands for reinforcements for regiments, batteries, and field ambulances must be met when they come. They are in the nature of things most likely to come in large numbers when military operations are active, and when consequently the pressure on the base hospitals is greatest. Further, when such activity is expected it may be considered prudent to reinforce the casualty clearing stations, and this makes a further demand on the medical staff at the base. At such periods, then, it is the base hospitals that are most liable to suffer reduction in personnel below what is desirable, and it will be the younger men who will be taken. It has been suggested that periods of temporary shortage at the base might be met by sending over "teams" from this country to fill the gap, and it appears probable that difficulties in the way of carrying out this plan may prove not to be insuperable.

It is not possible for a visitor to form a sound personal opinion on the question whether a smaller number of medical officers would suffice in France, but at the hospitals and clearing stations at which I made inquiry—and they were many—the answer was always to the same effect, though the tone varied; sometimes it was sarcastic, sometimes it betrayed a slight tinge of annoyance, only rarely was it admitted that the staff was sufficient. Commonly the reply was that the unit was undermanned, just able to get through the work in ordinary times, but hard pressed and overworked when the troops were attacking. The general conclusion seems to be that during the last four or five months the medical staff in France has been numerically as low as is compatible with efficiency, and that at busy times many of its members have been very hard worked, in some instances overworked.

A "quiet time," if of short duration, does not materially affect the position of advanced medical units. They have to clear up the situation left by the previous "push," and some of them may have to move forward, a change which entails a great deal of work.

There is a constant wastage among medical officers due to deaths, wounds, and sickness, and this must be made good if the standard is to be maintained. It can be made good from two sources at home—by medical officers newly commissioned, and by the return of others who have recovered from the wound or sickness for which they were invalided home. The first source is controlled by the professional committees and the second by the Army Medical Department, and it seems clear that both must be prepared to give constant attention to the problem.

As to what may be the possibilities of next winter no opinion can be expressed, but it may be observed that many medical officers will desire leave home to attend to their private affairs, and have deserved it.

Some Other Criticisms.

A man who goes to France as the guest of the British Medical Service there must very soon catch its spirit—a spirit of keenness informed by a lively belief that difficulties exist to be overcome, and an openness of mind that is ready to consider any new idea and to put it to the test if it seems to be sound. Such an environment breeds optimism in all who come within its sphere of influence, and it is admitted that the tone of these notes has been optimistic. They have reflected the impression made on the writer by observation of the way in which the members of the medical profession, the great majority of them until the other day civilian practitioners, are tackling problems new to them, and some of them new to medicine and surgery, and to sanitary administration.

But the men doing the work would be the last to think that they were attaining perfection, and it will not be out of place to refer to certain criticisms which the publication of these notes has brought from surgeons at home. As they have to do with surgery and not with administration, they will be all the more worthy of attention. One has reference to the circular, or so-called guillotine amputations, the results of which, as seen in this country, are described in terms of very emphatic condemnation. As this matter is dealt with by Lieutenant-Colonel Lynn Thomas from experience both at home and abroad, in a paper published this week (p. 481), no attempt will be made to discuss it here. Another allied subject is what is described as the abuse of the drainage tube, and in particular of large tubes, not only after amputation—a subject mentioned in the paper already referred to—but also for many wounds of limbs and trunk in which, when the cases reach this country, they are seen to have had a mischievous effect. It is held that adequate drainage can be obtained by other means less open to objection. Another subject of criticism is the manner in which some cases of fracture of the thigh have been splinted. The general opinion seems to be that

for men who have to be moved Thomas's splint should always be used until something more effective has been invented, which does not yet appear to be the case.

The practice of closing wounds which have been septic also comes in for some criticism. It is not questioned that when judiciously used the results of the method are very satisfactory both to the patient and to the surgeon, but it would seem that its application calls for the exercise of sound surgical judgement controlled by systematic bacteriological examination. In those hospitals in France in which I saw this practice followed very great care was exercised to avoid premature suture—that is to say, to postpone it until the infection of the wound had been reduced to proportions with which the tissues could be confidently expected to deal.

Expert Opinion on the Medical Service To-day.

As a nation we are justly proud of having raised an army of many millions which is proving itself the equal of the armies of our allies, and superior to the armies of our enemies. As a profession we may be as justly proud of having provided this great army with a medical staff which is proving itself thoroughly efficient. Of the medical officers now serving in France probably nearly nine-tenths were before the war engaged in civil practice, yet the visitor forms the impression that they have taken up this new work in a buoyant and thoroughgoing spirit. It was very satisfactory to have this impression confirmed by officers of experience, not only senior medical officers, but officers in other branches of the service. I have already quoted the words of the Commander-in-Chief; I may now quote the words of a senior medical officer holding a most responsible position with whom I had spent a long day, during which he took me to many medical units and showed me the elaborate and complex organization of the medical service of an army in the field. When I was bidding him good-bye next morning he said:

"I am glad to have the opportunity of making you the medium of informing the profession at home how nobly the medical officers—Territorial, Special Reserve, Temporary Commissioned, and from the Dominions—have responded to the calls I have made upon them from time to time at the front. All these officers have joined the army from civil life, previously unaccustomed to military duty and the hardships attendant on active service. The work they have done has been invariably of the best quality. To explain the character of this work would require a treatise; suffice it to say that wherever any body of troops is quartered, from the trenches to the base, medical officers are also there, required to undertake the multifarious duties that devolve on the medical service in war; they include administration, duties of command, medical and surgical work, preventive medicine, and all other matters associated with the health and comfort of an army in the field. The point I have in my mind, and which reflects so much credit on all concerned, is that without very much preliminary training these officers have quickly grasped the situation, and in a few months have become veterans. Their work has been splendid, and I hope when the medical history of the war comes to be written all these matters will be placed in their proper perspective. In the meantime, I think the profession at home should know how the services of those who have given up comfortable homes and have come out to France to assist are appreciated, and how nobly they have responded to the calls that have been made upon them."

CASUALTIES IN THE MEDICAL SERVICES.

ARMY.

Killed in Action.

Lieutenant-Colonel Arthur Nimmo Walker, R.A.M.C. (obituary notice published at p. 508).

Captain G. V. Bogle.

Captain Gilbert Vere Bogle, New Zealand Medical Corps, was killed while attending on the wounded on September 17th, aged 32. He was educated at Edinburgh University, where he graduated M.B. and Ch.B. in 1912, and, after acting as house-surgeon in the gynaecological wards of the Royal Infirmary, Edinburgh, went to New Zealand, where he was in practice at Hawkes Bay, till he returned to Europe with the Expeditionary Force.

Captain N. W. Broughton, R.A.M.C.(Temp.)

Captain N. W. Broughton, whose death in action we recorded last week, was the son of a well-known solicitor in Sydney. He was educated at the Sydney Grammar School. He entered the medical school of the Sydney University in 1908, and, after graduating, came to England and joined the R.A.M.C. At the university he was associated with practically all the undergraduates' associations, and took a prominent part in the work of the Undergraduates' Club, the Sporting Committee, and the Undergraduates' Union. He gained his University blue for cricket in 1912, and for football from 1909 to 1913. He represented the Sydney University in football against the New Zealand universities, and gained selection in various senior metropolitan teams in Sydney football. He was an extremely popular man at the University, and his death will be deeply deplored.

Captain M. P. Inglis, R.A.M.C.

Captain Maurice Paterson Inglis, R.A.M.C., was killed in action on September 17th. He was the second son of the Rev. William Balfour Inglis, B.D., of the Union Church, Valparaiso, and grandson of Dr. Maurice Paterson, lately Principal of Moray House Training College. He was educated at Watson's College, Edinburgh, and at the university in that city, where he graduated as M.B. and Ch.B. in 1914. A friend writes: "During his university career he showed great professional ability, besides proving himself an exceptionally fine all-round athlete. His tall commanding figure, his handsome bright open face, his unassuming courteous, genial manner, will live long in the recollection of all who were privileged to come in contact with him. He was, indeed, one of those to whom the profession look for the maintenance of its highest ideals, and one whose loss is greatly to be deplored. Much sympathy will go out to his parents, his wide circle of relations, and to the lady whom he was to marry." He got a commission as lieutenant in the Special Reserve of the R.A.M.C. on May 12th, 1913, was called up for service on November 10th, 1914, and went abroad in February, 1915.

Captain R. J. Wooster, R.A.M.C.(Temp.).

Captain Reginald Joseph Wooster, R.A.M.C., was killed in action on September 15th, aged 29. He was born in 1886, the fifth son of J. Ratcliff Wooster, Esq., of The Mount, Castlebar Road, Ealing, and was educated at St. Paul's School and at St. Mary's Hospital, where, after taking the diplomas of M.R.C.S. and L.R.C.P.Lond. in 1914, he held successively the appointments of house-surgeon, house-physician, and casualty house-surgeon. He took a temporary commission as lieutenant in the R.A.M.C. on October 10th, 1914; was promoted to captain on completion of a year's service; and was attached to the Rifle Brigade when killed.

Died of Wounds.

Major A. A. Martin, New Zealand A.M.C.

Major Arthur Anderson Martin, New Zealand Army Medical Corps, whose death was recorded in last week's British Medical Journal, died on September 17th of wounds received the same day, aged 40. He was educated at Edinburgh University, where he gained the Carlyle Scholarship in anatomy, the Grierson Scholarship in materia medica and pathology, and the Mackenzie Prize in practical anatomy. After graduating M.B. and Ch.B. with honours in 1900, he was house-surgeon to the Hospital for Sick Children, Great Ormond Street, London, and senior house-surgeon, Royal Hospital, Sheffield. He served as a civil surgeon in the South African Field Force in 1901–2, gaining the medal, and reported in our columns at that time from No. 13 General Hospital a case of traumatic aneurysm in the left groin treated by ligature of the common iliac artery, in which the patient recovered. He returned to this country, and graduated M.D.Edin. in 1903, taking the diploma of F.R.C.S.Edin. in the same year. He went to New Zealand, where he settled in practice at Palmerston North, and was surgeon to the hospital in that

town. He was appointed a representative of the Division to the Annual Representative Meeting of the British Medical Association at Aberdeen in 1914, and was in this country when the war broke out. He at once joined the R.A.M.C., the date of his first commission being August 14th, 1914. He was attached to the 15th Field Ambulance, and was through the battles of the Marne and Aisne, and was mentioned in Lord French's dispatch of January 14th, 1915, for gallant and distinguished service in the field. He was for a time surgical specialist to the No. 6 General Hospital, Rouen, and while holding that office contributed a paper entitled "Notes from a temporary clearing hospital at the front" to our pages on January 23rd, 1915; in it he dealt particularly with cases of gas gangrene and wounds of the abdomen. He afterwards returned to New Zealand for a short time, but in February, 1916, joined the New Zealand Army Medical Corps and became second in command of No. 3 Field Ambulance; it was while serving in that capacity that he received the wounds which caused his death. Those around him say that he was utterly regardless of danger or self. In New Zealand, where he practised at Palmerston North, he will be mourned as a generous and helpful friend by many who loved him, and where his ability and dominating personality will be much missed by numbers who admired and respected him.

He was the author of the much read book on the present war called *A Surgeon in Khaki*, published by Messrs. Arnold.

Captain J. Deighton, R.A.M.C.(S.R.).

Captain John Deighton, R.A.M.C., died of wounds on September 19th. He was the third son of Lieutenant-Colonel Deighton, R.A.M.C.(T.F.), and was educated at Cambridge and at the London Hospital, graduating as B.C. in 1914, and as M.B. in 1915. After acting as emergency and receiving-room officer at the London Hospital he took a commission as lieutenant in the Special Reserve of the R.A.M.C. on November 3rd, 1914, and was promoted to captain after a year's service. He was attached to the King's Own Royal Lancaster Regiment when killed.

Captain M. Peto, R.A.M.C.(Temp.)

Captain Morton Peto, R.A.M.C., died of wounds on September 22nd. He was the youngest son of the late Rev. A. H. Peto, of Leeds, and was educated at the Leeds Grammar School and at Leeds University, where he graduated as M.B. and Ch.B. in 1912. Subsequently he held the posts of ophthalmic and aural house-surgeon and of house-physician at Leeds Infirmary, and of house-surgeon to the Leeds Hospital for Women and Children. During the war he had served successively with a field ambulance, with the Cameron Highlanders, and with the Royal Berkshire regiment, being attached to the last when killed. He was mentioned in Lord French's last dispatch, and received the Military Cross on June 3rd, 1916. He took a temporary commission as lieutenant in the R.A.M.C. on September 26th, 1914, and became captain after a year's service.

Died on Service.

Major A. H. Benson, R.A.M.C.(Temp.).

Major Alfred Hugh Benson, R.A.M.C. (temporary), died suddenly at Seamer, near Scarborough, on September 24th, soon after his return invalided from the front. He was the only surviving son of the late Richard Benson, was educated at Bristol, at Radley, and at Caius College, Cambridge, and took the diplomas of M.R.C.S. and L.S.A. in 1887, the L.R.C.P.Lond. in 1888. Previous to the war he was in practice at Cleobury Mortimer, Shropshire. He served in the South African war, was wounded at Johannesburg and received the Queen's medal with five clasps, and the King's medal with two clasps, besides being mentioned in dispatches. During the present war he had been at the front eight months, commanding a Mounted Brigade Field Ambulance, and had since been employed on home service. He leaves a widow, a daughter, and a son, who is serving in France.

Wounded.

Captain W. Ainslie, R.A.M.C. (temporary).
Captain E. A. Alldridge, R.A.M.C. (temporary).
Captain J. A. Andrews, R.A.M.C. (temporary).
Captain T. E. B. Beatty, R.A.M.C. (temporary).
Captain J. Brown, New Zealand Medical Corps.
Captain J. F. Burke, R.A.M.C. (temporary).
Captain D. Chiles-Evans, D.S.O., R.A.M.C.(T.F.).
Captain H. G. Fraser, R.A.M.C. (temporary).
Captain H. A. Gillespie, R.A.M.C. (temporary).
Captain J. Green, R.A.M.C. (temporary).
Captain W. L. A. Harrison, R.A.M.C. (temporary).
Captain E. S. Jeffrey, Canadian A.M.C.
Captain E. S. Johnson, R.A.M.C. (temporary).
Captain W. B. Laurence, R.A.M.C. (temporary).
Captain W. Morrison, R.A.M.C. (temporary).
Captain P. J. O'Reilly, R.A.M.C. (temporary).
Captain J. S. Wallace, R.A.M.C. (temporary).
Captain H. E. P. Yorke, R.A.M.C. (temporary).
Lieutenant G. B. Ferguson, R.A.M.C. (temporary).
Lieutenant T. Russell, R.A.M.C. (temporary).
Lieutenant T. W. Sweetnam, R.A.M.C. (temporary).
Lieutenant R. F. Williams, R.A.M.C. (temporary).
Lieutenant J. R. Williamson, R.A.M.C. (temporary).

Deaths among Sons of Medical Men.

Armitage, Douglas W., Second Lieutenant Royal Sussex Regiment, youngest son of Dr. J. Auriol Armitage, of Netherwood, Hastings, reported missing at Loos on September 25th, 1915, and now presumed killed in that action. He was educated at Oundle School, where he held a scholarship, was in the O.T.C., and was captain of football and of the school in 1912. He entered Pembroke College, Cambridge, in that year, and in his second year at College obtained a Divinity prize. Enlisting in the Public Schools Battalion in September, 1914, he got his commission on February 26th, 1915, and went to the front in September, 1915, being killed very shortly after.

Baly, C. J. P. Tyson Sugar, Lieutenant The Buffs, East Kent Regiment, elder son of the late Dr. P. P. Baly, of Westward Ho, killed on September 15th, aged 19. He got a commission on December 30th, 1914.

Barkas, J. C. P., Lieutenant Durham Light Infantry, son of Dr. T. C. Barkas, of Newark, was killed recently. He got a commission on August 15th, 1914, and was for some time attached to the King's Shropshire Light Infantry.

Eccles, John Dennison, Captain London Regiment, eldest son of Major W. McAdam Eccles, R.A.M.C.(T.F.) died on September 27th, of wounds received on September 9th, aged 20. He was educated at Tretherne House and at Winchester College, where he was President of the Boats in 1913–14. He got a commission on September 6th, 1914, became lieutenant on November 21st, 1914, went to the front in July, 1915, was wounded in December, and received the Military Cross for conspicuous bravery. He returned to the front in April, 1916, and received his company, which he was leading in an attack when he was mortally wounded.

Fawsitt, Thomas Rubie, Second Lieutenant York and Lancaster Regiment, elder son of Dr. Fawsitt, of Holmfield House, Union Street, Oldham, killed September 16th, aged 30.

Leggatt, Ashley Gordon Scott, Second Lieutenant Royal Field Artillery, only son of Ashley Scott Leggatt, M.D., of 2, Walton Place, London, S.W., killed on September 16th, aged 31. His commission was dated December 28th, 1914.

Mackay-Coghill, Hugh, Captain Highland Light Infantry, second son of the late Dr. J. D. Mackay-Coghill, reported wounded and missing at Givenchy, September 25th, 1915, now presumed killed on that date, aged 36. He was born at Kandy Castle, Ceylon, in 1879, and entered the army in 1900, serving through the latter part of the South African war, and gaining the Queen's medal with four clasps. He became captain on May 16th, 1907, and on January 16th, 1911, was appointed an Assistant District Commissioner in Sierra Leone. He resigned this post to rejoin his regiment in September, 1914, and went to the front immediately after his return to Europe.

Maguire, Hugh, Second Lieutenant 3rd Connaught Rangers, attached 7th Royal Inniskilling Fusiliers, killed in action in France on September 9th, was the third surviving son of Dr. Conor Maguire, of Claremorris, co. Mayo. He was educated at Clongowes Wood College and University College, Dublin. His commission was dated January 29th, 1916.

Snowball, J. H., Second Lieutenant Royal Field Artillery, eldest son of the late Dr. Snowball, of Melbourne, killed September 14th, aged 30.

Trechmann, Kuno Griffith, Second Lieutenant Northumberland Fusiliers, elder son of Dr. Trechmann, of Hampstead, late of Sydney, New South Wales, killed July 2nd, aged 20.

Webb, Henry Carlyle, Captain Border Regiment, son of the late Dr. H. J. Webb, killed September 19th, aged 25. Before the war he was at Aspatria Agricultural College. He became captain on April 18th, 1915.

Wilson, Charles Blair, Captain Canadian Infantry, only son of the late Charles Blair Wilson, M.D., of Florence, killed September 17th. He was educated at Hollis Hill and at Winchester, and had only been two months in Canada when the war began.

Medical Student.

Goddard, J. Lister, Second Lieutenant Norfolk Regiment, reported wounded and missing on September 15th, and since reported killed. He was the third son of Major C. E. Goddard, of Wembley, Middlesex, and had completed his second year as a medical student at University College, London. He got a commission on September 22nd, 1914, and went to the front a year ago.

NOTES.

HONOURS.

SECOND-CLASS Senior Sub-assistant Rafi-ud-din Khan, of the Indian Subordinate Medical Department (Bengal), has been admitted to the Second Class of the Order of British India, with the title of Bahadur.

The Military Cross has been conferred upon Second Lieutenant Charles Ely Rose Sherrington, Oxford and Bucks Light Infantry, aged 19, the son of Professor C. S. Sherrington, F.R.S., of Oxford. The following is the account of the service for which the decoration has been bestowed: "When the enemy in great numbers counter-attacked his trench, he held on till almost surrounded, and then withdrew with the survivors of his force, eighteen in number, in such a manner that our line remained intact. Later the position was regained by a counter-attack."

England and Wales.

LONDON SCHOOL OF MEDICINE FOR WOMEN.

ON October 2nd the Queen opened the extension of the London School of Medicine for Women, a description of which appeared in the BRITISH MEDICAL JOURNAL of September 30th. Her Majesty was received by the dean, Miss Aldrich-Blake, M.D.; the Duchess of Marlborough, treasurer of the Extension Fund; Mr. F. D. Acland, M.P., chairman of the council; and Miss L. M. Brooks, secretary and warden. Among those present at the ceremony were the Earl of Rosebery, chancellor, and Sir Alfred Pearce Gould, vice-chancellor of the University of London, of which the school is a part; the presidents of the Royal colleges; Sir John Broadbent, representing St. Mary's Hospital, with which the school is temporarily affiliated for clinical teaching; Dr. Mary Scharlieb, the Duchess of Bedford, and the Marchioness of Lansdowne. After a short address by the dean, describing the progress of the school, Dr. Winifred Callis, lecturer in physiology, thanked the Queen for the interest in the undertaking she had shown, specially mentioning that Her Majesty had given a scholarship to the school. Mr. Acland read a telegram of congratulation from Dr. May Thorne and the twenty-nine other former students of the school now working with the Royal Army Medical Corps at Malta. He said that throughout the war the Queen had given a splendid leadership to women in the hospital and the workroom. Her interest in the school as a part of the movement for the opening up of wider fields of usefulness to women was an encouragement to them all. The Queen then formally declared the buildings open, with an expression of her best wishes for the success of the school. Her Majesty afterwards inspected the new laboratories.

LEEDS UNIVERSITY MEDICAL SCHOOL.

The annual distribution of prizes at the Leeds University Medical School took place on October 2nd. The attendance was much smaller than usual and a number of the winners of prizes were unable to receive them in person owing to absence on military service. The Duke of Devonshire, who presided, said nothing appealed to their admiration and hope more than the work done in the medical school which represented the oldest part of the University. The annual address was delivered by the Hon. Rupert-Beckett. Sir Berkeley Moynihan, in proposing a vote of thanks, said 94 per cent. of the medical men who were wearing khaki to-day were civilians by training and habit. In July last he was in France, and saw the whole of the medical work that was done there. In his report he stated that after seeing all that he could almost surreptitiously, always by surprise, he felt he had walked into theatres and seen as good work as if he had gone haphazard into a series of theatres in the London hospitals. Never in his life was he so proud of his profession as when he was in France.

Scotland.

THE proposal to remove the Scottish Divisional Office of the unemployment section of the insurance scheme for Scotland from Edinburgh to London has aroused great opposition in Scotland. The corporation of Edinburgh has recently unanimously adopted a strongly worded protest, and instructed the Lord Provost's Committee to take immediate action.

It was announced at a meeting of the Edinburgh parish council last week that a satisfactory arrangement had been made with regard to soldiers who had become mentally unfit on account of the war. Under a scheme approved by the Secretary for Scotland they would be treated as private patients, and would be chargeable, not to the rates, but to the Treasury.

The new ward recently added to Springburn Central Hospital, Glasgow, was formally opened by Surgeon-General Culling, D.D.M.S., Scottish Command, a short time ago. He referred to the generosity of the North British Locomotive Company in not only giving the original hospital with three wards, but when further accommodation was needed adding a fourth ward, providing 87 additional beds. Sir George Beatson, who presided, said that while the ward had been in use for some time the Scottish branch of the Red Cross Society considered that some opportunity should be taken to acknowledge the generosity of the company, and Sir Hector Cameron, in proposing a vote of thanks, remarked that what he admired more than its generosity was the ingenuity with which the company had hidden its gift from the public.

VILLAGE SCHEME FOR DISABLED SOLDIERS.

A further step towards the realization of the scheme of the Scottish Veterans' Garden City Association for the housing and care of permanently disabled soldiers and sailors has been made, for the foundation stone of the first settlement at Longniddry has been laid. It is proposed at once to erect twenty cottages, and for this purpose a sum of £19,000 has been collected, but it is hoped eventually to increase the number of cottages on the site to forty. The site is six acres in extent, and the cottages to be erected will contain two, three, or four rooms. Part of the ground is reserved for workshops, a public washhouse, and a public hall. Similar schemes are being worked out in other districts, including Perthshire and Aberdeenshire. At the opening ceremony Lord Wemyss, from whom the site had been obtained, said that the homes were not for soldiers totally incapacitated, but for those who were handicapped, the intention being to enable them to live in the garden city with their families untrammelled and unrestricted. They would be encouraged to continue their own trades or to learn new ones in the workshops. Another ceremony was performed by Mrs. Parker, sister of Lord Kitchener, who laid the foundation stone of the Kitchener Memorial Cottages. She expressed the hope that similar schemes would be established in England, for the work should not be centralized, since the great desire of many a wounded man was to get back to his own part of the country. She urged prompt action, for owing to the multiplicity of Government committees and voluntary committees, the men were being bandied about and often left in penury while formalities were being completed. Sir George Beatson, in proposing a vote of thanks to Mrs. Parker, spoke of the special orthopaedic department about to be established in Glasgow. Everything would be done for the soldier that the best skill in that direction could devise, but it was a comfort to know that if they remained disabled the Scottish Veterans' Garden City Association existed to give them further care in their battle of life. The Kitchener Memorial Cottages are established to the memory of Lord Kitchener and are to be devoted "to the use and comfort of those who have suffered in the service of their country and of humanity."

DUNFERMLINE COLLEGE OF HYGIENE AND PHYSICAL EDUCATION.

In a report on the work of the Dunfermline College of Hygiene and Physical Education dealing with the two years 1914–15 and 1915–16, Dr. L. D. Cruickshank, medical officer and chief inspector of physical training to the Scottish Education Department, states that during the former session it was carried on under great inconvenience. Owing to the requisitioning of the new buildings of the College by the military authorities on the outbreak of the war, a serious difficulty was encountered in providing accommodation for the largest number of students ever enrolled. The conditions could not have been faced for another year without serious impairment of the efficiency of the training. The methods of instruction

and the general level of the work are said to have been satisfactory. Anatomy, physiology, and hygiene were taught with exceptional skill and thoroughness, and a high standard was maintained in practical gymnastics and dancing. There has been "a most commendable improvement" in the methods and practice of teaching. Dr. Cruickshank says he has been in close touch with the College throughout the past two years, and he is of opinion that the administration has been efficient and the organization excellent. Generally his experience has been that persons trained in the institution have proved successful teachers and acceptable colleagues on school staffs.

Ambulance Trains in Aberdeen.

Two ambulance trains, carrying 284 wounded soldiers, arrived at Aberdeen on October 1st. The men had all been engaged in the recent advances. The first, which brought 136 patients, was the hundredth to bring sick and wounded soldiers to Aberdeen since the war began, the average number in each train being 120. It was the fifty-sixth train in connexion with which the transport arrangements have been carried out by the Red Cross Society. The first contingent of wounded arrived in Aberdeen on September 27th, 1914. The second train brought 148 patients. Among those present were Colonel Scott Riddell, Surgeon to the Royal Infirmary, Red Cross Commissioner; Colonel Marnoch, Professor of Surgery in the university; and Dr. Matthew Hay, M.O.H. With the arrival of this train the number of sick and wounded soldiers brought to Aberdeen since the beginning of the war amounts to over 12,000.

Ireland.

Tuberculosis and Housing.

At the conference of Irish Municipal Associations, City Hall, Belfast, the Chairman, Alderman King Kerr, M.D., read a paper entitled "Suggestions to municipal authorities for the treatment of tuberculosis." The Insurance Acts in conjunction with the Notification Acts had, he said, for the first time placed the treatment of tuberculosis on a practical basis, from which the most beneficial results might be hoped if public authorities took full advantage of them. They were enabled by these Acts to take into their own hands the entire control and carrying out, under Local Government Board supervision, of the measures to be adopted, the Government undertaking to meet half the deficit remaining after deducting the insurance contributions. Whilst not excluding cure, even in pulmonary cases, and whilst regarding surgical cases taken early with the most hopeful eye, it was to prevention that their most strenuous efforts must be directed. He gave some particulars of the scheme in operation in Belfast; the points to be impressed on authorities were simple, but full of importance and hope. The clearing away with all possible expedition of unhealthy homes, and provision of healthy ones; the encouragement of medical men to seek out and report all cases of young people showing signs of impaired vitality, and the dealing with these children through an open-air life, and the building up of their impaired physical condition.

Mr. Field, M.P., said that until they had good houses for the people to live in they could not expect to cure tuberculosis. Mr. Sibthorpe (Dublin) mentioned, as showing what could be done if this question were resolutely faced, that since the new housing scheme had been completed in Kingstown the death-rate of children under one year of age had so fallen that it was now the lowest in the United Kingdom. Mr. Kennedy (Kingstown) expressed the opinion that in every primary school in Ireland classes should be introduced for teaching the rising generation the importance of fresh air and the best way of keeping dwellings in a sanitary condition.

Mr. T. Dawson (Tipperary) read a paper on the provision of dwellings for labourers under the Landed Property Improvement Acts, and the manner in which operations thereunder had been carried out. He said that in the urban district of Tipperary there were 85 houses on the Barrymore estate which were provided under the Acts referred to in the period 1878 to 1880, the amounts borrowed totalling £7,800. Taking it for granted that the longest possible period for repayment (35 years) applied to this loan, it was apparent that the money borrowed was now paid off. The rents derived from these cottages amounted to at least £600 a year, and of the 85 tenants there was not one "labourer required for the proper cultivation of the estate." The owner of these houses owned the principal portion of the town of Tipperary, and the Council had not been able to have a single house erected on this property under the Housing of the Working Classes Acts. In January, 1915, the Council applied at a Local Government Board inquiry for sites on the property in question to the extent of 2a. 3r. 18½p., on which it was intended to have 97 houses erected. The owner bitterly opposed, eventually appealing to the county court against the order of the Local Government Board Inspector, with the result that, as matters now stood, the Council was authorized to acquire only 24 perches on the worst portion of the property, on which six houses could be erected. He sincerely hoped that such a state of affairs did not exist on any other estate. Nevertheless, he submitted that the Association should have the whole question thoroughly investigated, and, if necessary, call the attention of Parliament to the matter. . . . . .

A resolution was proposed, seconded, and discussed, directing the honorary secretaries to lay the facts before the Chief Secretary and the members of Parliament, and to urge that the better housing of the working classes should receive the immediate attention of the Irish Government.

Correspondence.

ANTE-PARTUM CLINICS.

Sir,—In his "Notes on an Antenatal or Pregnancy Clinic," which appear in the Journal of September 23rd, Dr. Ballantyne takes some trouble in defending his use of the word "antenatal," and from some expressions that he uses it is evident that he is replying to some criticisms contained in a recent article of mine. He quotes from four well known writers, but the curious result is that all these quotations go to support the statement that the word has been inappropriately used by Dr. Ballantyne and others. The authors of repute whom he quotes all use the word "antenatal" in a sense which refers to the child only, and not to the mother. We speak of a person's natal day as a synonym for his birthday, and antenatal life refers to the child's life before birth. It is the application of the word to the pregnant woman which seems to me objectionable. The word is harmless when employed as Dr. Ballantyne first used it in his phrase "antenatal pathology," which applies to the pathology of the infant alone, although the title of his first book on the subject, *Diseases of the Foetus*, is more to the point. Antenatal treatment is generally understood as treatment of the unborn infant. An "antenatal clinic" ought to mean a clinic concerned with the unborn child, and if used in any other sense is not correct. The "antenatal treatment of the expectant mother," if literally interpreted, can only mean the care of the expectant mother before she is born, which is absurd.

Dr. Ballantyne has been much puzzled to find a word for his clinic, and still hesitates between "antenatal" and "pregnancy" clinics. The latter, however, he finds "rather ungraceful." It is not difficult to find another word. What is wrong with "antepartum"? This word, which is as old as the study of midwifery, means "before the act of parturition." It refers both to the mother and to the child, and in that differs from "antenatal" and is therefore more correct. As regards the expression "expectant mother," there is no difficulty in knowing what it means. It is generally understood as meaning a woman who is looking forward with confidence and some degree of hope to the birth of a child. It is a figure of speech, an ellipsis, and may be used with propriety by "the poet, the novelist, the divine, and the justly-admired man of letters." It might even be used by a journalist. But it seems hardly definite enough for a scientific writer. Does a young married woman with a tumour, who believes herself to be pregnant, come under the category of an "expectant mother," or does it even include an unmarried

woman who is unpleasantly surprised to find that she is pregnant?

Dr. Ballantyne, no doubt, thinks all this merely "pedantic purism," but, as Sir Francis Champneys remarks in his letter in the same number of the Journal, "People are apt to think that a new technical word implies a new discovery." Dr. Ballantyne still apparently believes that his antenatal clinic is something new and peculiar to his hospital, but, as I have already pointed out, antepartum treatment and the care of the pregnant woman has been a feature of St. Mary's Hospital, Manchester, for many years. The morning's work in his particular clinic, which Dr. Ballantyne describes, is the sort of thing that has been going on every day for years in the out-patient department of St. Mary's Hospital.—I am, etc.,

Manchester, Sept. 27th. Archibald Donald.

HEALTH IN PUBLIC ELEMENTARY SCHOOLS.

Sir,—I venture to think there is no class of medical practitioners of greater value to the State than those who take a real interest in the health of the children of the working class, and especially of those in the public elementary schools. The work is by no means easy, but, with patience and experience, an ordinarily observant doctor may become expert in tracing the various diseases to their respective causes. I would roughly classify the diseases under two heads: (1) Those due to excessive ventilation and low temperature in schoolrooms. (2) Those due to mental or nervous disorders, such as fright of the teachers, or rough schoolfellows, and overpressure of the brain by too long hours at lessons.

In order to treat the cases successfully it is essential to discover the cause of illness. If a child who suffers from catarrh of the nostrils, or the throat, be compelled to sit in a draught for many weeks, he may become the subject of chronic tonsillitis, or otitis media, with subsequent otorrhoea. If a child is severely punished by a teacher, he may develop severe chorea within twenty-four hours. I have seen two cases of chorea this year which are of peculiar interest, as they indicate a traumatic origin having medico-legal interest.

On January 20th a boy aged 13 was brought to see me by his mother. He was obviously afflicted with chorea, and very weak. His mother told me that on the previous day, in the course of physical drill, he had a blow with the teacher's fist over the heart, which caused severe pain. He was very restless, and unable to sleep that night, and was unable to attend school the next day. I ordered him to be kept quiet, and gave him liquor ferri perchloridi as a tonic. For several weeks the movements of chorea were painfully severe, and then slowly decreased. The mother at once consulted a lawyer for the purpose of claiming compensation. The boy has already been nearly eight months under my care, and has lost all these months so far as education at school is concerned.

The other case of chorea was more serious. A girl aged 9, fond of school and most regular in attendance, returned home on March 2nd, at mid-day, in a highly excited and nervous state, and told her mother that teacher had caned her on the hand, and afterwards seized her by both arms and shaken her violently. The mother wrote a letter to the teacher and complained of what she had done to her child. During the following night the child screamed loudly in her sleep. Next day she managed to go to school and was much worse the following day. The mother then kept her in bed a week, hoping the rest would restore her. But she got worse, and on the tenth day from the ill treatment I was called to see her. I found her in bed in a state of nervous collapse, with constant and strong choreic movements, quite unable to feed herself, or even hold a tea-cup. She remained in this condition several weeks, and then gained strength enough to get up daily for a few hours. For many weeks she was irritable and troublesome, requiring constant watching. She is still feeble in mind and not able to attend school.

I know of many other cases of chorea which were the result of fright, and I think fright is the most frequent cause.

When a scholar is struck or shaken by a teacher, the result is more serious than a blow or a shake during play; the mental element of shame and fear of the teacher is a strong factor, and probably a stronger factor than the physical pain. I wish to point out that cases of illness from punishment can only be detected by the family doctor, and his duty is to report such cases to the school medical officer, in order that inquiry can be made and the teacher receive due warning to treat all children with patience and kindness.—I am, etc.,

Torquay, Sept. 29th. H. H. Tidswell.

JUNG'S PAPER ON ANALYTICAL PSYCHOLOGY.

Sir,—Dr. Long's reply is not quite ingenuous, nor does she quote me correctly. My words were (British Medical Journal, August 19th, p. 275), "it seems to me a mistake to use this symbolic language [that is, the symbolic language of dreams, which I had just previously in the same sentence mentioned] in waking life." Dr. Long omits the word "this," which is vital to my meaning, and substitutes "daily" for "waking," thus completely altering the sense of the passage, which she nevertheless puts into quotation marks as if it were mine. It is not mine. I never said such a silly thing as she puts into my mouth; and all her comments based on the assumption that it is mine fall to the ground. She says that my expressions come from the unconscious itself. I have asked her before, and I ask her again, what evidence she has of her assertions about the unconscious. She does not answer, and she will not answer; because she cannot answer. There is no evidence. I can speak positively of my own expressions. They did not come from the unconscious, whatever that may be, but were deliberately and intentionally framed by my conscious self. If Dr. Long's garbling of my words came from her unconscious, I suggest that she should educate her unconscious in conscientiousness.

At last we have a definition of the unconscious. Dr. Long defines it as "the psychological contents which form the background of consciousness." Contents of what? Of consciousness? Then how can the contents of a thing form the background of that thing? And of what do these contents consist? What are they? A definition should define what a thing is, not where it is, or what it is contained in; and Dr. Long's definition does not even tell us what the unconscious is contained in, much less what it is. The definition is no definition. It is not even a description. To say that the contents are psychological contents does not help us in the least, and would not help us even if we knew what meaning Dr. Long attaches to the word "psychological." It is clear that she attaches to this word some peculiar meaning of her own, for she speaks subsequently of psychological incest, which is quite meaningless unless we attach some peculiar meaning to psychological. We might as well speak of psychological murder, or psychological arson. I should like to know from Dr. Long whether stocks and stones are psychological. They are usually considered to be unconscious, and, if so, they must be part of the great Unconscious. They are, I suppose, contents of the unconscious, but whether they are psychological contents we must leave to Dr. Long to determine.

It is satisfactory to know from Dr. Long that there is very much in the unconscious besides what is uncleanly, but if this is so, how is it that the cleanly "contents" of the unconscious escape all notice from the psychoanalysts? Why is it that the uncleanly "contents" absorb their whole attention? How is it that we never hear of any but these uncleanly contents?

Dr. Long assures us that we are forced to direct our researches to the unconscious. I beg her pardon, but for my own part I feel no such constraint, and there are many others in the same case. When I find that research into what is undefinable and unintelligible reveals only what is disgusting, and leads to nothing but assertions for which no evidence is produced, even after demands repeated again and again, I do not find myself by any means forced to pursue my researches further in the same direction. On the contrary, I am confirmed in my suspicions that that which is undefinable and unintelligible does not exist, and that assertions for which no evidence can be produced rest upon no evidence and are not worth consideration. I freely admit that there is much literature (mainly German) upon the subject, but I do not recognize any obligation to study the literature of a subject merely because that literature is copious. There is much literature on Supralapsarianism and Sublapsarianism; there is a very extensive literature on Sabellianism, Tritheism, and Manichaeism; there is an enormous literature on the Arian heresy; but the existence of all this literature lays upon us no obligation to study it. If, when we sample it, we find it a mere beating of the air; a string of assumptions without any foundation; a series of assertions unsupported by any evidence; we are absolved from any obligation to study it further, and may safely look upon

it as evidence of a past craze, and leave it to gather dust on the shelves of libraries, to line trunks, to wrap books of more worthy contents, and to be read by people who do not know when they are wasting their time.

Dr. Long is good enough to recommend to me a German book upon incest. I am much obliged to her, but not being a psycho-analyst, I have no interest in the subject. Even if it had been written by an Englishman I should not have read it. I have read in my time an immense number of German books on the mind, and I have never found in one of them written since Kant anything worth remembering, and I have given up the search in despair.

Finally, I will make an appeal to Dr. Long. Psycho-analysis, like other things made in Germany, has had its day, but its day is over. It is now exposed, blown upon, and discredited. It has been very skilfully advertised, and has been made very profitable, but its day is now past. It was always silly, and it is now not even fashionable. Had she not better abandon it before she is irretrievably left behind?—I am, etc.,

Parkstone, Dorset, Sept. 23rd. CHAS. A. MERCIER.

THE POSITION OF THE PROFESSION AFTER THE WAR.

SIR,—The profession *is* in bad odour. What is the cure? Not "strong leadership," not necessarily universal adhesion to the "Association," but local organization. Strong local bodies in every district, owning no loyalty but to themselves and their professional interests, federated, as suggested by Dr. J. Cuthbertson Walker (September 30th), with a central head quarters, would soon bring that respect to the profession which is accorded to all those who know their own interests and how to protect them.

Let us drop all that which is connoted by the words "consulting room," and change it for "office."

The Association, having the machinery, would well serve as the centralizing body, provided it is prepared to adopt strict business methods. In this way the profession will lead itself, and not weakly bow either to a "strong leader" nor a guiding "Association." Only local bodies can know whether this or that suits them, and to make them come into line with an other-opinionated majority is to cause disaffection from the interests of the profession. Let each district express its mind, as has successfully been done in some parts of the country. Let, then, the Association courageously suggest that meetings are called locally of all medical men; not under the aegis of the Association itself, but as the "medical men of So-and-so."

Time passes, and the enemy is already at work, counting on finding us as unorganized to-morrow as yesterday.—I am, etc.,

September 30th. ORGANIZER.

SIR,—I see Dr. Sheahan, in the BRITISH MEDICAL JOURNAL of September 30th, accuses me of wanting another Committee. That is not so; I doubt the utility of another Committee, and said so. What I want is another official assisted by the necessary staff and responsible to the Council. I regret that my letter was mutilated in the JOURNAL office, or it would have given a much clearer impression of what I think this official could do. A certain paragraph was omitted with my consent, but another section of my letter, in which I pointed out that the new official should be a journalist, not only because, as such, he would have been well used to lobby work, but because he could educate the profession as to the ill effects of projected legislation and by articles in the lay press could create a public opinion against such legislation in advance, was omitted without my knowledge or consent.—I am, etc.,

Oldham, Oct. 1st. F. L. POCHIN, M.D.

ACCORDING to the *Medical Record* there was in the last days of August a sharp decline in the number of cases of poliomyelitis in New York City; for the week ending September 2nd only 477 cases were reported. On September 4th there were 3,784 patients under treatment for the disease in all the New York hospitals. The total number of cases up to September 9th was 8,486 with 2,100 deaths. It is estimated that the total cost of the epidemic will be about £200,000.

Obituary.

ARTHUR NIMMO WALKER, M.D.CANTAB.,

LIEUTENANT-COLONEL R.A.M.C., SURGEON TO THE ST. PAUL'S EYE HOSPITAL; OPHTHALMIC SURGEON TO THE DAVID LEWIS NORTHERN HOSPITAL AND TO THE SCHOOL FOR THE INDIGENT BLIND, LIVERPOOL; OPHTHALMIC SURGEON TO NOBLE'S HOSPITAL, DOUGLAS, I.O.M.

THIS war is bringing out the best and noblest characters of man, and seldom have these been better portrayed, and now sacrificed, than in the case of my dear friend and former pupil, Lieutenant-Colonel A. Nimmo Walker, who was killed in action on September 24th, at the age of 42 years. He was a distinguished student at Liverpool and a graduate of Cambridge University, where he took his B.A., M.B., B.C. in 1899, and M.D. in 1910.

I have known him since his childhood, and I have always held him in the highest admiration both for his character and ability. He acted in the Royal Infirmary as my house-physician, and I never had a more able or more conscientious assistant. I well remember on one occasion, after the death of a patient, he was much perturbed in mind by a fear that he had not done all that he might have done. When he spoke to me on the subject I had much pleasure in being able to assure him that if he had failed to save the patient, which I did not think was possible, he had in no way, either by omission or commission, contributed to the death—a death which I had looked upon from the beginning as inevitable.

Immediately after his tenure of office at the Royal Infirmary he volunteered for service in the South African war, and served as a civil surgeon for fully twelve months. He did splendid work, and in the regiment to which he was attached the rate of sickness was very low. At first his commanding officer rather looked upon him as a young faddist and pooh-poohed his ideas of having all the water which the men drank boiled. He was soon converted when he found that the incidence of typhoid fever, which was then rampant, was very low in his regiment.

When Nimmo Walker returned from South Africa he intended to start in practice as a physician, but he soon found that the men who had stayed at home had picked up the chief plums, and there was no suitable vacancy left for him. It was always thus in this country, and yet you will still find men defending the principle of voluntaryism in war whereby the best are sacrificed for the mediocre who never would be missed.

He then followed in his father's footsteps and took up the speciality of ophthalmology, of which he soon became a brilliant ornament and practical exponent. In his association with the School for the Indigent Blind he found that a large amount of blindness was preventable, and consequently took up with enthusiasm the subject of ophthalmia neonatorum. At first, I regret to say, he met with some opposition from his professional brethren, but Walker was not a man to be diverted from what he considered the path of duty and of righteousness by any opposition, although it might mean to him serious financial loss. His pioneer work has since been handsomely acknowledged. Miss Van Blarcom, secretary of the Committee for the Prevention of Blindness, State of New York, was sent over to this country to study this subject. After giving a full account of Nimmo Walker's work, she said:

> One could dilate at length upon the details of this admirable work and the great care and thought with which it was planned, but the highest tribute that can be paid to it is to report that largely by this means the occurrence of blindness from ophthalmia neonatorum has been practically wiped out in Liverpool.

In the report of the Ophthalmia Neonatorum Committee of the British Medical Association it is stated:

> The Liverpool plan affords an almost ideal method of grappling with a large proportion of the cases of infantile ophthalmia, and affords an excellent instance of what may be accomplished by co-operation between health authorities on the one hand and local hospitals on the other. The writer does not hesitate to suggest that what has been successfully initiated in Liverpool might well be imitated in London and other large cities.

On the formation of the Territorial Force Walker joined the combatant ranks and eventually became a major in a brigade of artillery. On the declaration of war his brigade

was mobilized and spent twelve months in training at Sevenoaks. When there was a dearth of medical men at the front he was strongly urged to leave his battery and join the R.A.M.C. He sought my advice in the matter, and freely discussed the pros and cons. I pointed out that there was a real dearth of surgeons; the conscription Act was not then adopted; morever, I knew that his mother and the other members of his family wished him to join the R.A.M.C. He brushed the family wishes to one side as he said they were influenced by questions of his safety. His wish was to know in what capacity he could do most for the country. If he were given ophthalmic work he had no doubt he was a better ophthalmologist than an artillery officer; but, on the other hand, if he were sent out in charge of an ambulance, it was such a long time since he had done any general surgical work that he had no hesitation in saying that he could do better work in the artillery. I ventured to offer the opinion that the War Office would show sufficient intelligence to put him to his own job. Regarding safety, that did not enter much into his calculation; if he were killed there was simply an end to his career, but, on the other hand, he acknowledged that if he were maimed for life it would be a very serious matter for him. He did not like to appear to his men (whom he had trained and for whom he had a real affection) to be now seeking a safe job, and if his battery had been then going to the front there is no doubt that he would have gone with it; but the battery had not then got the new guns, and there was considerable uncertainty as to whether it would ever go to the front, and a strong probability that it might be retained in the reserve in this country. This uncertainty was the deciding factor in making him change into the R.A.M.C. He was practically appointed ophthalmic surgeon to one of the large military hospitals in this country, but was displaced, and, by the irony of fate, Nimmo Walker was sent to the front in charge of an ambulance, first as major, but he was afterwards promoted to the rank of lieutenant-colonel. A man of Walker's ability and tenacity soon mastered all the details of his new work. His success is well shown in the numerous letters which his mother has had from the front, a few extracts from which I can publish without any breach of privilege. The A.D.M.S. writes:

I have only known him since May last, but our association has been very intimate, as we saw each other daily, especially during the present great battle. I am not exaggerating when I say that Colonel Walker was my right hand man, and I trusted and respected him to the utmost. He was the soul of honour, as brave as a lion, beloved by his officers and men, and esteemed by every one in the division. During the desperate fighting which ended in the capture of one of the enemy's strongest positions, he displayed conspicuous bravery, and I recommended him for the immediate reward of the D.S.O. I beg to offer you my very sincere sympathy, and I feel that later on it may be some consolation for you to know that your son died as he lived, endeavouring to save the lives of others. I shall always remember your son as a very gallant soldier, a typical English gentleman, and a dear friend.

The senior chaplain writes:

It was an honour to know such a man as Colonel Walker. He was a man in a thousand, and one only wishes there were more men like him. His first thought was for those who were under his care. Indeed it was through his care and thoughtfulness for his officers and men that he met his death. When the shelling began he stood in the open and ordered all his men under cover, and he would not move until he saw that all were safe first. A true and fearless soldier standing at his post to the last; always cheery, a true Christian and English gentleman, one beloved and respected by all who knew him. His one thought out here was for you, his mother; you were always in his thoughts, and your name was often on his lips.

This filial piety, referred to by the chaplain, was a trait in Walker's character which I always admired.

Nimmo Walker's career is ended, and many a man might feel proud to be able to leave such a record. "Well done, good and faithful servant; enter thou into the joy of thy Lord."

JAMES BARR.

ST. CLAIR B. SHADWELL, M.D.,

WALTHAMSTOW.

A FORMAL announcement of the death of Dr. St. Clair Shadwell, Walthamstow, at the age of 64, was published last week. It occurred at his residence in Walthamstow on September 23rd. He received his medical education at Guy's Hospital, took the diploma of M.R.C.S.Eng. in 1875, and that of L.R.C.P. in 1876. He became D.P.H.Eng. in 1891, and graduated M.D.St.And. in 1895. After acting as resident obstetrician at Guy's Hospital, and clinical assistant to the Hospital for Children, Great Ormond Street, he settled in practice in Walthamstow. He was for thirteen years M.O.H. for the district; he became a member of the Society of Medical Officers of Health, and contributed two papers to *Public Health*, the one on the need of infectious hospital accommodation for the suburban districts of the metropolis, and the other on the Inebriates Act, 1898, regarded from a public health point of view. He was a certifying factory surgeon, medical examiner to the Board of Education, and medical officer to the Post Office. He joined the volunteers at an early date, and eventually retired with the rank of Surgeon Lieutenant-Colonel (1st Volunteer Battalion Essex Regiment), and received the Volunteer Decoration.

Dr. Shadwell was a member of the British Medical Association, and took a very active interest in its work, especially in matters concerning the Metropolitan Counties Branch. He was one of the small body of men, including Dr. Brickwell of Chigwell and Dr. Percy Warner of Woodford Green, both of whom have predeceased him, who kept the Division together through good and bad fortune. He was one of its early chairmen, an office in which he showed unfailing courtesy and tact. He was Representative of the Division in 1907, 1908, and again during the controversy as to the Insurance Act in 1910, 1911, and 1912. During those anxious times he expressed the views of his Division in a manner very satisfactory to it. Dr. Pottinger Eldred, an ex-secretary of the Division, to whom we are indebted for some of these particulars, writes:

"The strongest feature in his relation to the Association was his great loyalty to it, and when men consulted him with regard to joining other similar associations his answer was invariably that 'he would not do so; as for himself, he would sink or swim with the Association.' The assistance he gave to the local Division at all times was of the utmost value. His death will leave a gap very difficult to fill. He enjoyed the trust and confidence of men of all shades of opinion on account of the breadth of his views upon medical politics and ethics. For a period of eight years I was intimately associated with him in connexion with the work of the Association, and received very valuable help and suggestions for the efficient performance of my own duties during some very critical times.

"Of late years his health prevented him from taking part so vigorously in the affairs of the Association, but he always had its welfare at heart and was deeply interested in all matters concerning it. He served with regularity for years on many committees, but in such a modest and retiring manner that few men were aware of the great services he rendered. He faced his last illness with a calm courage, knowing that it was only a question of 'how long,' which was the admiration of those who had the privilege of seeing him shortly before the end, and an example to all."

He was a member of the council of the Metropolitan Counties Branch for a good many years, and was at one time chairman of its Ethical Committee. He was also for a short time a member of the Central Council.

ROLAND PLAYFAIR CAMPBELL, B.A., M.D.,

C.M.McGILL,

LIEUTENANT-COLONEL C.A.M.C.

No heavier loss has fallen upon the Canadian Army Medical Service than the death at the front of Lieutenant-Colonel Campbell. It is difficult to write of him in measured terms, so great was the respect he inspired in all who came in contact with him; so whole-hearted was the devotion of his colleagues and of his unit towards him; and so thorough, modest, and capable was he in all his duties, whether as a medical man or a soldier.

"Bly" Campbell, as all his friends termed him, was of the manse, the son of a distinguished Canadian Presbyterian, the late Rev. Professor John Campbell. He was born in Montreal in July, 1876, and had a distinguished career as a student, graduating B.A.McGill in 1897 and M.D., C.M. in 1901. Following graduation, he was for two

years resident in the Montreal General Hospital; then for more than a year he continued his studies in Germany, becoming interne at the Pathological Institute at Göttingen, and working also at the Surgical Clinic at Breslau, where, under Neisser, he became specially interested in genito-urinary surgery, which he made his life-work.

Returning to Montreal, he was appointed medical superintendent of his old hospital, holding this position for three years, until 1907. Later he was made assistant surgeon and given charge of the genito-urinary clinic of that hospital. From being demonstrator in pathology he became lecturer in genito-urinary surgery at McGill University. Keenly interested in research, he wrote several papers upon renal pathology and surgery. When Ehrlich, prior to placing salvarsan at the disposition of the profession in general, sent over a supply of this drug in advance to the leading syphilologists in North America, Campbell it was who first received it in Canada, and tested and reported upon it. He was, in fact, an admirable example of the research surgeon, and had a profound influence in encouraging other young surgeons in Montreal, who seemed naturally to gather around him to undertake research. He was thus largely influential in the establishment in the university of a department of experimental medicine open to practitioners in the city.

He had joined the C.A.M.C. in 1905, and in 1910 was placed in command of No. 5 Canadian Field Ambulance at Montreal. An enthusiastic soldier, he offered his services at the very beginning of the war, and from No. 1 Field Ambulance was attached as major to No. 1 Canadian General Hospital, C.E.F. With this unit he was in charge of the Canadian sick through the winter of 1914–15 at Salisbury Plain, there accomplishing excellent work under very difficult conditions. In the meantime No. 6 Canadian Field Ambulance was being assembled at Montreal by Major Burnett, and in March, 1915, Campbell was called back to assume command of this unit as lieutenant-colonel.

It has been urged that so capable a specialist should have been employed by the Canadian Army Medical Service in direct connexion with his speciality; but Campbell was a soldier before everything and preferred the command of his unit at the front to any administrative or special position that could be offered to him, nor is it any exaggeration to say that his unit rapidly made a reputation for itself by its remarkable capacity and *esprit de corps*—even its horse lines were acknowledged to be the best along the whole front. In Sir Douglas Haig's dispatch of June 15th he was mentioned for gallant and distinguished conduct in the field.

During the three days' operations beginning on September 15th he was placed by his A.D.M.S. in charge of the clearing of the ground in the front area, and to quote that A.D.M.S. (Colonel Fotheringham), "With his usual sense of duty and disregard of personal safety he was well up with the advance on the morning of Saturday the 16th . . . trying to estimate the situation for himself rather than to depend on information from regimental medical officers and bearers." It was here, just after dawn, when conducting a group of bearers towards safety, that a shell exploded and a fragment fractured his right arm, while another penetrated his chest. Borne back to a dug-out he there refused to be treated, directing that others whose wounds were not hopeless should be looked after; he died within half an hour, of internal haemorrhage.

He was a very perfect gentleman, and the manner of his death was but the epitome of his life.

THE LATE SIR VICTOR HORSLEY.—Major G. Grey Turner, R.A.M.C.(T.F.), writes: The sudden death of Sir Victor Horsley was a profound shock to those of us serving in Mesopotamia. We had all seen him so full of energy and apparently so little affected by the climate that it appeared established that he, at least, would not be bowled over by the great heat. When I met him in Alexandria in March last, after an interval of three or four years, I noticed that he looked considerably older, and in conversation it was plain that his strenuous work in that city and at the Dardanelles had affected him very much. But the comparative quiet after the evacuation had given him the opportunity of making a trip to Luxor, and I shall not forget the enthusiasm with which he showed me a beautiful series of photographs he had taken. Many had been made in the very early morning to avoid the shadows, and were beautiful works of art. At a largely-attended clinical meeting, held at No. 17 General Hospital, Sir Victor opened a discussion on the treatment of gunshot wounds of the head, and gave us the results of his experiences in the present war. It was characteristic that on this occasion he referred to the way that his latest experiences had confirmed the suggestions which he had made years before regarding the mechanism of optic neuritis in cases of cerebral tumour. By his work in Alexandria and on the Peninsula he had certainly richly earned a rest in England, and I understood that as he considered his work in Egypt over, it was his intention to return home. I was therefore no less surprised than delighted to hear soon after my arrival at Busrah that Sir Victor was to come out as consulting surgeon to the Mesopotamian Forces. On Good Friday I had the good fortune to accompany him round the wards of the 3rd British General Hospital; it was a delightful clinical morning, to which I shall always look back with great pleasure. He took the keenest interest in everything, and at once saw where his advice and influence might be of service to the patients and to the staff. From the first it was evident that there was much to occupy his energetic mind, and it was only too obvious that his stay in Mesopotamia was to be taken up with hard work, in spite of the climatic conditions. Shortly afterwards he went up the lines and made two trips to the front, inspecting the field ambulances, etc. I had a cheerful letter from him, dated June 17th, in response to my request for his advice and assistance, but I did not again see Sir Victor until just after my arrival in Amara, when I happened to come across him just as he was about to be admitted to hospital. Though looking ill, he was as cheerful as ever, and at once began to talk about some arrangements of mutual interest. He attributed his trouble to the heat, which had been very trying for some days, and on this particular afternoon the thermometer had reached 120° F. in the shade. But he thought that his indisposition had been overcome, and that in a few days he would be well again. This was about 7 p.m. on Saturday, and by Sunday at 8 p.m. he was dead, in spite of the devoted attention of the staff of the hospital. Even those of us who have only made a short sojourn in this country are very familiar with sudden death, but this was too great and unexpected a calamity, and was the cause of profound depression among the medical units stationed here. Sir Victor told me that up to that fatal Saturday he had been absolutely well, and that he had not felt the heat too trying. I am told that it was a very usual thing to see him in Amara during the heat of the day, and there are many who thought that he exposed himself too much and did not sufficiently respect the climatic conditions. The funeral took place on the evening of July 17th, and was very largely attended. He was buried at the same time as some seven other soldiers, among them a patient on whom he had operated, and in whose case he had taken an especial interest. Colonel Green, A.D.M.S., the commanding officers of all the hospitals, and between eighty and a hundred members of the R.A.M.C. and I.M.S. followed the body to the grave. It seemed fitting that after his work for the service Sir Victor should have found a soldier's grave; and as he was laid to rest the sun was setting in the direction of the distant battle line which he had visited, and the crack of a Maxim at practice accompanied the burial service. The coffin bore the simple inscription—"Colonel Sir Victor Horsley, A.M.S. Died 16/7/16."

All of us here feel his death very deeply. We know that we have lost a wise counsellor and friend just at a time of special need. The A.M.S. will be much the poorer, for we all felt that his great and stimulating personality was of great use to our cause.

My own personal loss is very keen. It is now nearly eighteen years since I went to town as a recently qualified youth with the object of doing some post-graduate work. At that time Sir Victor Horsley was a very busy man, at the height of his fame, but he took much trouble to help me in various ways, and his kindness to me has continued in the intervening years. We all feel the deepest sympathy for Lady Horsley and her family in their great trial.

Dr. Andrew Woods Smyth, a surgeon of considerable distinction, died at Donemana, co. Tyrone, on September 4th, in his 84th year. He was born at Castleberg, in the same county, and in 1849 went to New Orleans, where he took the degree of M.D. in 1859. From 1862 to 1887 he was a member of the Louisiana State Board of Health, and for many years he was house-surgeon of the Charity Hospital, New Orleans. During the last ten years of his residence in that city he was director of the United States Mint. In 1894 he retired from practice and returned to his native country. He was a man of wide information, and took a keen interest not only in science, but in literature, music, and other forms of art. His name was best known to the profession by its association with one of the very few successful operations for the treatment of subclavian aneurysm by ligature of the innominate artery. In Treves and Hutchinson's *Manual of Operative Surgery*, third edition, 1910, p. 372, it is stated that among twenty-four cases collected by Ashurst only two of the patients survived. One of these was a man on whom Smyth operated in 1864. This case is recorded in the *Sydenham Society's Biennial Retrospect*, 1865–6. It is sufficiently remarkable to make the details worth recalling. The carotid was tied as well as the innominate, so as to stop the regurgitant flow of blood; notwithstanding this precaution, on the fourteenth day haemorrhage to syncope occurred. Haemorrhage recurred at intervals for a period of thirty-seven days, and was temporarily arrested by filling the wound with shot, till, on the fifty-first day after the operation, a "terrific" haemorrhage took place, stopped by syncope. As this bleeding came from the distal side and from the subclavian artery, the vertebral was tied, with perfect success; bleeding did not recur. "This fact," says Erichsen (*Science and Art of Surgery*, tenth edition, 1895, Vol. II, p. 194), "is of the utmost surgical value; it shows that the secondary haemorrhage, which may be looked upon almost as the necessary sequence of the ligature of the innominate artery, may be arrested and the patient's life saved by the ligature of the principal arterial branch that communicates with that and carries regurgitant blood into the distal end of the artery which was originally ligatured." The following is the subsequent history as obtained from Smyth by Erichsen: "After ten years of good health, in which the patient was able to follow his employment as a ship's steward, the pulsation returned, and the aneurysm reached a size larger than before. Thinking it might be fed by the internal mammary Smyth ligatured that vessel but without result. About six months later an abscess formed over the sac and the aneurysm became diffused into it, and, as a last effort to save the patient's life, the sac was laid open. The haemorrhage was profuse, and the openings of the vessels into the sac could not be seen, so that the operator had to content himself with plugging the wound. The patient died a few days after. The *post-mortem* examination showed that the circulation had been carried on chiefly by means of the aortic intercostals and branches of the axillary artery." Dr. Smyth also made some original researches on the kidney. In a letter from his brother, Dr. William Woods Smyth, of Maidstone, which was published in the British Medical Journal of September 23rd, 1911 (p. 711), it is stated that "A. W. Smyth showed that there was no communication between the Malpighian corpuscle and the uriniferous tubules, as taught by Bowman; that there was no filtration; that the water reached the tubules by their own epithelial cells; that the glomerule was a vascular hydraulic ram, acting with such force as in one instance to push a calculus half an inch in diameter down a ureter." Dr. Smyth was the author of two books, *The Collateral Circulation of Aneurysm*, and *The Structure and Function of the Kidney*. He married a granddaughter of the late Senator Bouligny of Louisiana, and leaves one daughter, the wife of the Rev. David Hay of Donemana.

Dr. Lanphier Vernon Jones died on September 8th at Bletchingley, Surrey, aged 53. He was the son of the late Dr. Orlando Jones, of Harrogate, and studied at Trinity College, Dublin, taking the degrees of M.B., B.Ch. in 1888 and becoming M.D. in 1892. He was for a period resident medical officer to the Adelaide Hospital, Dublin, and after settling in London acquired a large practice in the West End. He was a member of the British Medical Association, and contributed several papers to this Journal; he was also a member of the council of the London and Counties Medical Protection Society. The funeral took place at Bletchingley on September 11th.

Universities and Colleges.

UNIVERSITY OF LONDON.

St. Bartholomew's Hospital Medical School.

The following entrance scholarships have been awarded: Entrance Scholarship in Arts (£100 for one year) to E. H. Weatherall, Bolton Grammar School. Senior Entrance Scholarships in Science (£75 each for one year) to C. F. Krige, Hertford College, Oxford, and A. G. Shurlock, Jesus College, Cambridge. Junior Entrance Scholarship in Science (£150 for one year) to C. H. Andrewes, Highgate School.

UNIVERSITY OF EDINBURGH.

Military Service.

The calendar of the University of Edinburgh for 1916–17 gives a list of those members of the university who have been killed on service; they numbered 211 on July 15th last. The number on service at that date was 4,526, and there were, in addition, 460 cadets in the O.T.C. preparing for commissions. Over 1,100 ex-cadets, out of a total of 3,379, hold commissions—artillery 383, engineers 121, infantry 491, and medical units 169; naval commissions numbered 229. There are 756 privates in one or other of the services. The honours gained during the same period are as follows: C.B., 4; C.M.G., 15; D.S.O., 20; Distinguished Service Cross, 2; Military Cross, 54; D.C.M., 2. Over a hundred men have been mentioned in dispatches, some more than once.

UNIVERSITY OF ABERDEEN.

A special diet of the final professional examination in medicine was held in the first week of October, to afford candidates the opportunity of obtaining their medical and surgical degrees without waiting until the next ordinary examination, which will not take place until March.

UNIVERSITY OF GLASGOW.

The winter session at the University will open on October 16th. By an Army Order of August 26th, registered medical students now serving with the colours, if not passed for General Service, Class A, are to be relegated to Class W, Army Reserve, and sent back to continue their studies, subject to the condition that they join the Officers' Training Corps at the University. This will affect many medical students who have been called to the colours, as well as those still at the University. Under an arrangement with the Scottish Education Department and the War Office, the Registrar is able to give certain students certificates stating that they are full-time students, and these students, if not passed as fit for Class A, will be transferred to Class W. This arrangement will cease at the discretion of the War Office.

UNIVERSITY OF DURHAM COLLEGE OF MEDICINE, NEWCASTLE-ON-TYNE.

The *Calendar for 1916–17*[1] contains all the university information required by students and others, and, in addition, gives examples of the papers set at its recent matriculation examinations. The examiners in Greek and Latin unseen translations may be congratulated on the pretty turn of fancy shown by their selection of passages of unusual topical interest for candidates of to-day—such as Caesar's description of his dealings with barbarian tribes and Xenophon's account of fighting against barbarians.

[1] *University of Durham College of Medicine, Newcastle-on-Tyne. Calendar for the Year 1916–17.* Newcastle-on-Tyne: A. Reid and Co., Ltd. 1916. (Cr. 8vo, pp. 205.)

The Services.

EXCHANGES.

Captain R.A.M.C.(T.) attached to Staff of General Hospital, B.E.F., France, offering ample scope for surgical work, desires exchange with Territorial Officer at home, preferably stationed in or near London, or Eastern Command. Please state full particulars as to unit, station, and duties in confidence to No. 4000, British Medical Journal Office, 429, Strand.

A French hospital for Russian wounded is to be established at Petrograd. The Municipal Council of Paris has voted a subvention of £2,000 towards the cost of foundation.

Medical News.

THE Harveian Oration before the Royal College of Physicians of London will be delivered by Sir Thomas Barlow at 4 p.m. on Wednesday, October 18th.

A COMMUNICATION has been received by the Medical Secretary from the Petrol Control Committee stating that in cases where a medical practitioner discontinues using his car the duty on the amount of petrol which he has not used will be refunded. Full particulars should always be given of the circumstances in which a refund of duty is requested. A licence authorizing the purchase of motor spirit is not transferable.

A COMMITTEE formed by members of the Royal Microscopical Society, the Quekett Microscopical Club, and the Photomicrographic Society is arranging for microscopical exhibitions in the late afternoons or evenings at Y.M.C.A. huts in various centres in the metropolitan area and the home counties, and invites the co-operation of owners of microscopes. Communications may be addressed to the Honorary Secretary, Microscopical Department, Y.M.C.A., Tottenham Court Road, W.

THE National Dental Federation of France has organized an interallied congress of dentistry, which is to be held in Paris on November 6th to 13th. The congress, which has the official sanction of the Minister of War, will devote its attention to wounds of the jaw and face, to military dentistry and prothesis, and to the organization of services of dental surgery for the army during and after the war. The honorary president is M. Justin Godard, Under Secretary of State for the Army Sanitary Service. All dentists belonging to any of the allied countries are invited to take part in the congress. Communications should be addressed to M. George Villain, 45, rue de la Tour d'Auvergne, Paris.

A GENERAL meeting of the Medical Society of London will be held at 8 p.m. on Monday next, when the retiring President, Sir StClair Thomson, will draw attention to a plaque removed from the Society's house in Bolt Court to the present library. The plaque was erected originally by Dr. John Coakley Lettsom, the founder of the Society. At 8.30 the incoming President, Lieutenant-Colonel D'Arcy Power, R.A.M.C.(T.), will deliver an address on John Ward and his Diary. At a meeting on October 23rd Mr. D. McCrae Aitken will demonstrate cases illustrating orthopaedic principles and methods in military surgery, and on November 3rd a discussion on epidemic nephritis will be introduced by Captain Langdon Brown, R.A.M.C.(T.). The Lettsomian Lectures will be delivered by Colonel Cuthbert Wallace, C.B., A.M.S., and the oration by Sir William Osler.

Letters, Notes, and Answers.

THE telegraphic addresses of the BRITISH MEDICAL ASSOCIATION and JOURNAL are: (1) EDITOR of the BRITISH MEDICAL JOURNAL, *Aitiology Westrand, London*; telephone, 2631, Gerrard. (2) FINANCIAL SECRETARY AND BUSINESS MANAGER (Advertisements, etc.), *Articulate Westrand, London*; telephone, 2630, Gerrard. (3) MEDICAL SECRETARY, *Medisecra Westrand, London*; telephone, 2634, Gerrard. The address of the Irish office of the British Medical Association is 16, South Frederick Street, Dublin.

☞ *Queries, answers, and communications relating to subjects to which special departments of the* BRITISH MEDICAL JOURNAL *are devoted will be found under their respective headings.*

QUERIES.

AMBERLEY asks for suggestions in the treatment of a man aged 45 who suffers from intolerable itching, worst at night, chiefly in the axillae and round the genitals. The urine is normal. No cause is apparent.

C. DE R. asks what local preparation can be prescribed in the following case: A girl, aged 7, received a blow from an ear of Indian corn on her left eye. When seen one month later there was a marked iridodonesis, with a small iridodialysis on the inner side of the eye, considerable dilatation of the pupil and traumatic paralysis of the iris. There was no luxation of the lens, and, besides the facts mentioned, nothing abnormal was noticed in her eye, except, perhaps, a slight rise in the tension. Even the vision seemed to be almost as good in the left as in the right eye.

INCOME TAX.

P. inquires whether he can deduct (1) the amount of his subscriptions to the British Medical Association and kindred associations, and (2) the loss incurred in the publication of a medical book.

*** (1) On a strict interpretation of the law, as illustrated by a fairly recent decision in the Scottish courts, possibly not, though the attitude of the House of Lords in the case of Ussher's Wiltshire Company *v.* Bruce suggests that it might be allowed on the broad ground that the subscriptions represent annual payments made for reasons of commercial or professional expediency. In any event, such portions of the subscriptions as represent payments for the supplying of current medical literature should be allowed, though the onus of showing what proportion is so represented may rest on our correspondent.

(2) To bring the transaction within the scope of the Income Tax Acts for assessment or for allowance it should be shown that it is not of an isolated and casual nature, but that there is in existence something in the nature of a "business" or "vocation" of writing books for sale. The likelihood or otherwise of recurrence, the intention with which the book was published, and all the other circumstances attending the publication may affect the answer to the question.

WHEN DOES THE INFECTIVITY OF GRANULAR OPHTHALMIA CEASE?

UNCERTAIN asks when a patient who has been suffering from acute granular ophthalmia, but has still a little redness and swelling of the bursal conjunctiva of one upper lid, may be considered so far cured as to admit of his mixing with soldiers in camp.

ANSWERS.

MOSQUITOS.

H. D. writes: I am a martyr to mosquito bites. My experience is that if I wash my face and arms with carbolic soap and apply Lloyd's euxesis shaving cream to any exposed parts at bedtime I suffer little or no inconvenience from their bites. The carbolic renders the bites innocuous, and the eucalyptus smell in the cream keeps the mosquitos off.

DR. R. L. WOTHERSTON (Bradford) states that she has found the following plan recommended by an old negress in America satisfactory: After being bitten, wet the affected part with saliva, then immediately rub in common salt. Vinegar is better than saliva. Citronella oil generally saves the situation if used in abundance.

LETTERS, NOTES, ETC.

CARE OF DISABLED SOLDIERS.

DR. S. E. WHITE (London, W.), writes: The Statutory Committee, in entering on its new duties for the care of disabled soldiers, makes special mention in its circular of those uncertifiable transiently nerve-shaken men who have been discharged from the army to their homes. It points out that of such cases there are an infinite variety, many showing quite novel phenomena, requiring to be dealt with in a variety of ways, and not easily to be disposed of according to the institutional plan obtaining hitherto in the treatment of aggregates of mental cases. In fact, nearly all the wounded are naturally more or less nerve-shaken, and the great majority recover their balance with rest and care in the base hospitals. As the Committee's circular points out: "The worst thing for an (unwounded) patient of this class is to be placed in an institution to brood over his ailment. The efforts of the local committees should be directed to finding employment, giving them every encouragement and assistance, and keeping always before them that they are *curable*, and that in a short time they will be normal citizens." The gain from an economic point of view need not be dwelt on; the gain to our brave soldiers will be incalculable.

The first thing needed is a register of all discharged uncertifiable soldiers of this class. Then those who are not getting on very well at home ought to have an opportunity of spending a little time in a convalescent home to help their recovery in cheerful surroundings, to give them interest and occupation, to set them on their feet again, and link them up with their old, self-supporting life. If such homes were attractive, ex-soldiers would go to them willingly; and, to banish apprehension, they ought to be removed altogether from anything connected with suspicion of insanity or its inevitably depressing atmosphere. Many benevolent people would be glad to lend their houses to be equipped and staffed, if the local committees would accept their offers and lend their valuable advice and assistance in the matter of organization. As the BRITISH MEDICAL JOURNAL noted recently, these discharged men are now free agents, and they cannot, if uncertifiable, be legally placed under detention.

SCALE OF CHARGES FOR ADVERTISEMENTS IN THE BRITISH MEDICAL JOURNAL.

	£	s.	d.
Seven lines and under	0	5	0
Each additional line	0	0	8
A whole column	3	10	0
A page	10	0	0

An average line contains six words.

All remittances by Post Office Orders must be made payable to the British Medical Association at the General Post Office, London. No responsibility will be accepted for any such remittance not so safeguarded.

Advertisements should be delivered, addressed to the Manager, 429, Strand, London, not later than the first post on Wednesday morning preceding publication, and, if not paid for at the time, should be accompanied by a reference.

NOTE.—It is against the rules of the Post Office to receive *poste restante* letters addressed either in initials or numbers.